Check method of DC fan motor (fan motor/outdoor controller circuit board)

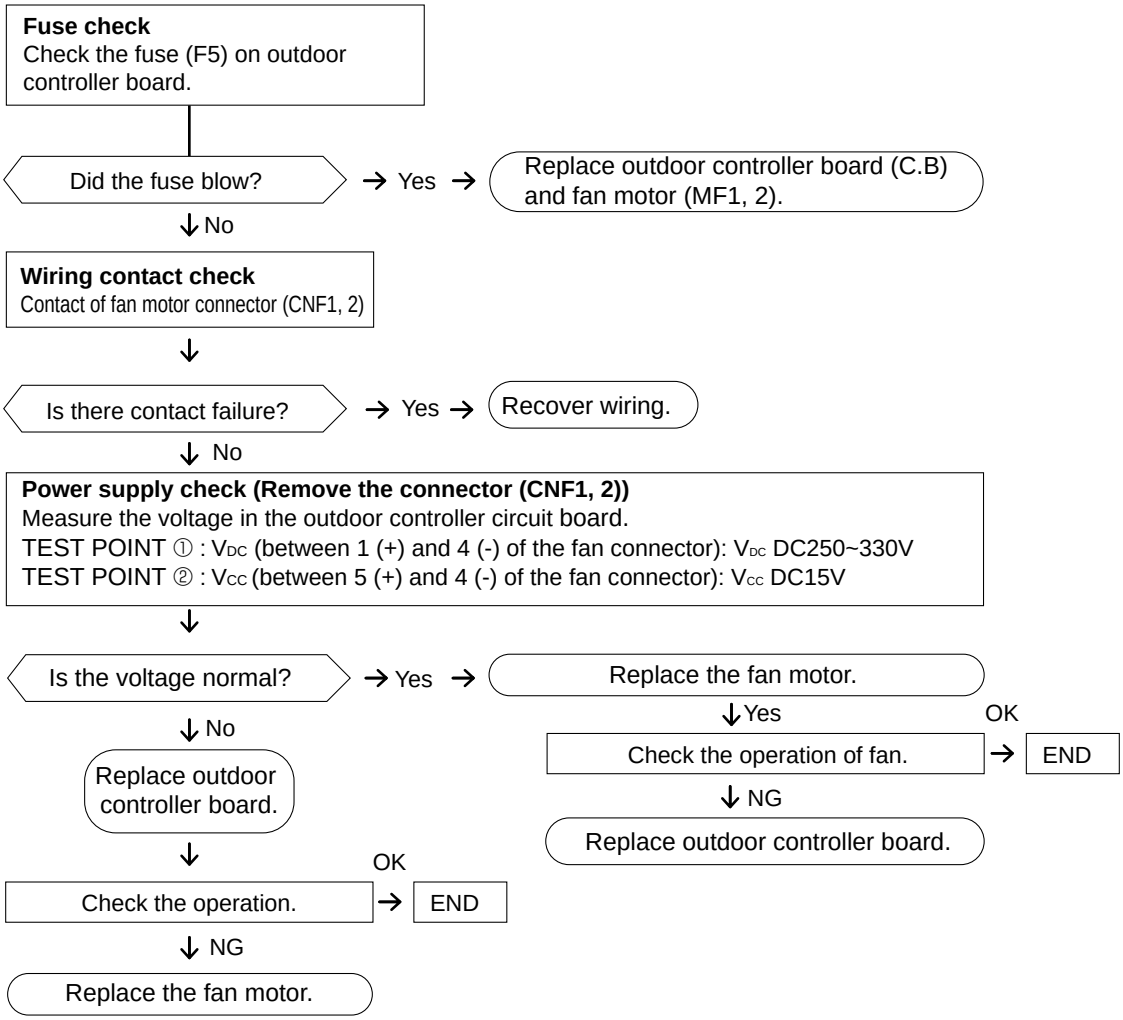
① Notes

· High voltage is applied to the connecter (CNF1, 2) for the fan motor. Pay attention to the service.

· Do not pull out the connector (CNF1, 2) for the motor with the power supply on.
(It causes trouble of the outdoor controller circuit board and fan motor.)

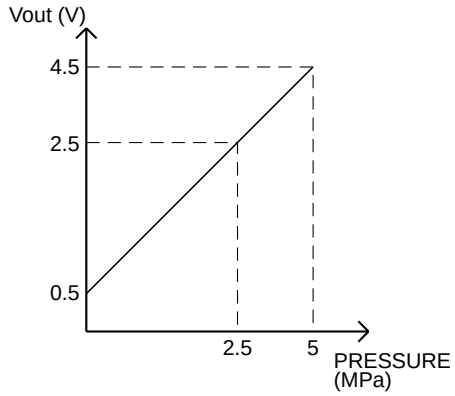
② Self check

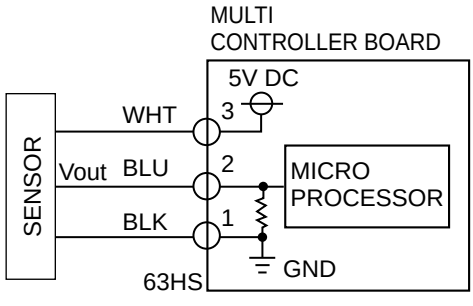
Symptom : The outdoor fan cannot turn around.


Fuse check
Check the fuse (F5) on outdoor controller board.
Did the fuse blow?
Yes
Replace outdoor controller board (C.B) and fan motor (MF1, 2).
No
Wiring contact check
Contact of fan motor connector (CNF1, 2)
Is there contact failure?
Yes
Recover wiring.
No
Power supply check (Remove the connector (CNF1, 2))
Measure the voltage in the outdoor controller circuit board.
TEST POINT ① : VDC (between 1 (+) and 4 (-) of the fan connector): VDC DC250~330V
TEST POINT ② : VCC (between 5 (+) and 4 (-) of the fan connector): VCC DC15V
Is the voltage normal?
Yes
Replace the fan motor.
Yes
OK
Check the operation of fan.
END
NG
Replace outdoor controller board.
No
Replace outdoor controller board.
OK
Check the operation.
END
NG
Replace the fan motor.

10-6. HOW TO CHECK THE COMPONENTS

<HIGH PRESSURE SENSOR>





③-① : 5V (DC)

②-① : Output Vout (DC)

<Thermistor feature chart>

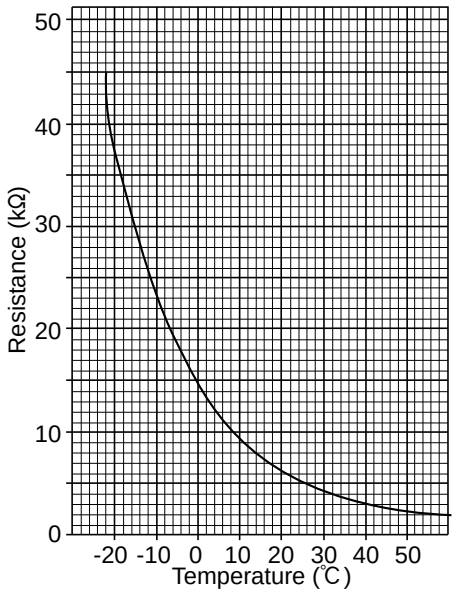
Low temperature thermistors

- Thermistor <Liquid> (TH3)
- Thermistor <2-phase pipe> (TH6)
- Thermistor <Ambient> (TH7)

Thermistor R0 = 15kΩ ± 3%
B constant = 3480 ± 2%

$$R_t = 15\exp\{3480(\frac{1}{273+t} - \frac{1}{273})\}$$

0℃	15kΩ	30℃	4.3kΩ
10℃	9.6kΩ	40℃	3.0kΩ
20℃	6.3kΩ		
25℃	5.2kΩ		



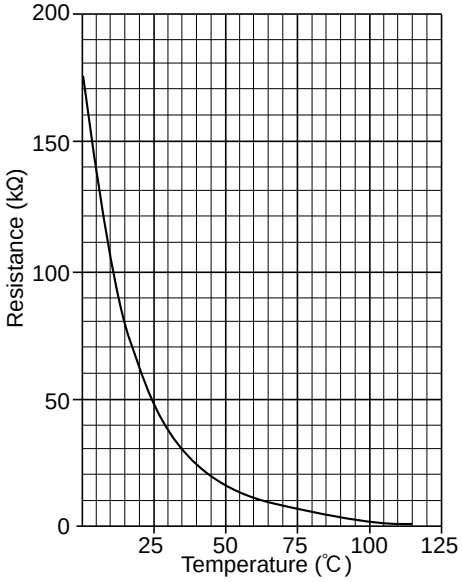
Medium temperature thermistor

- Thermistor <Heatsink> (TH8)

Thermistor R50 = 17kΩ ± 2%
B constant = 4150 ± 3%

$$R_t = 17\exp\{4150(\frac{1}{273+t} - \frac{1}{323})\}$$

0℃	180kΩ
25℃	50kΩ
50℃	17kΩ
70℃	8kΩ
90℃	4kΩ



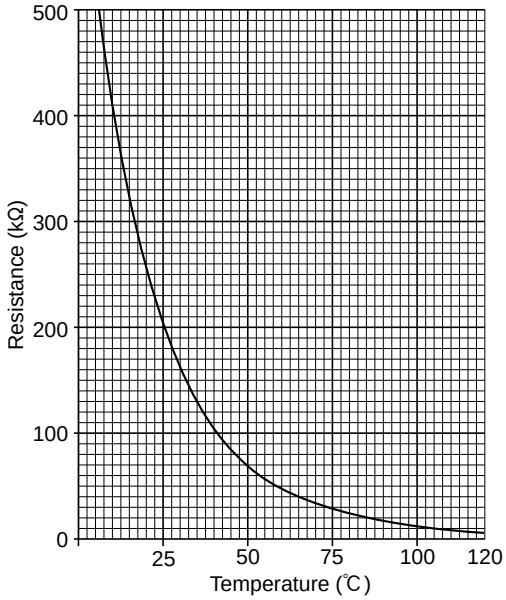
High temperature thermistor

- Thermistor <Discharge> (TH4)
- Thermistor <Comp. surface> (TH34)

Thermistor R120 = 7.465kΩ ± 2%
B constant = 4057 ± 2%

$$R_t = 7.465\exp\{4057(\frac{1}{273+t} - \frac{1}{393})\}$$

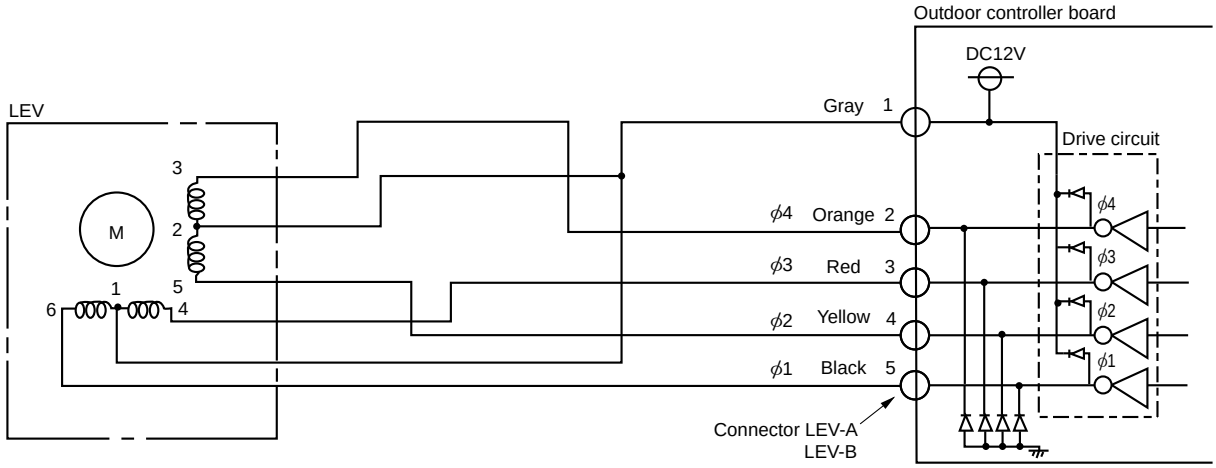
20℃	250kΩ	70℃	34kΩ
30℃	160kΩ	80℃	24kΩ
40℃	104kΩ	90℃	17.5kΩ
50℃	70kΩ	100℃	13.0kΩ
60℃	48kΩ	110℃	9.8kΩ



Linear expansion valve

(1) Operation summary of the linear expansion valve

• Linear expansion valve opens/closes through stepping motor after receiving the pulse signal from the outdoor controller board.
• Valve position can be changed in proportion to the number of pulse signal.
<Connection between the outdoor controller board and the linear expansion valve>



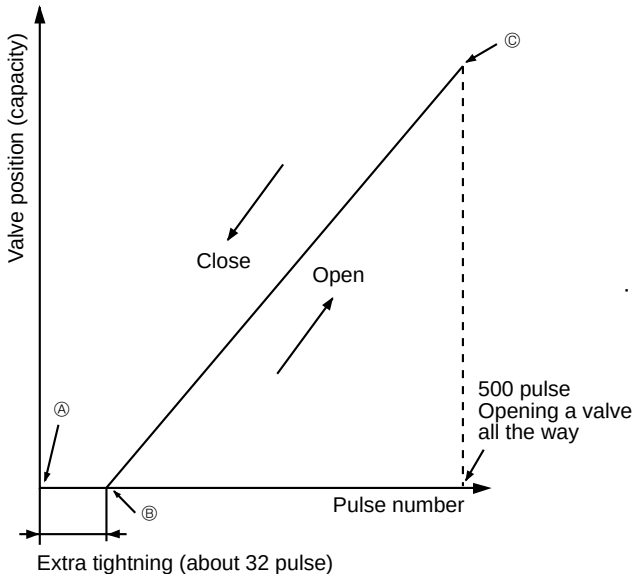
<Output pulse signal and the valve operation>

Output (Phase)	Output							
	1	2	3	4	5	6	7	8
ϕ1	ON	ON	OFF	OFF	OFF	OFF	OFF	ON
ϕ2	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
ϕ3	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
ϕ4	OFF	OFF	OFF	OFF	OFF	ON	ON	ON

Opening a valve : 8 → 7 → 6 → 5 → 4 → 3 → 2 → 1 → 8
Closing a valve : 1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 → 1
The output pulse shifts in above order.

· When linear expansion valve operation stops, all output phase become OFF.

(2) Linear expansion valve operation



· When the switch is turned on, 700 pulse closing valve signal will be sent till it goes to Ⓐ point in order to define the valve position. (The pulse signal is being sent for about 20 seconds.)

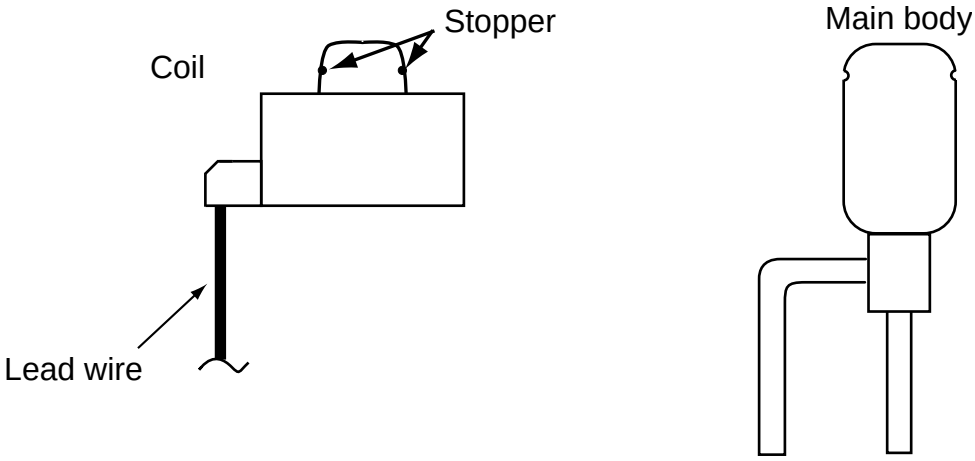
When the valve moves smoothly, there is no sound or vibration occurring from the linear expansion valve : however, when the pulse number moves from Ⓑ to Ⓐ or when the valve is locked, more sound can be heard.
No sound is heard when the pulse number moves from Ⓑ to Ⓐ in case coil is burnt out or motor is locked by open-phase.

· Sound can be detected by placing the ear against the screw driver handle while putting the screw driver to the linear expansion valve.

(3) How to attach and detach the coil of linear expansion valve

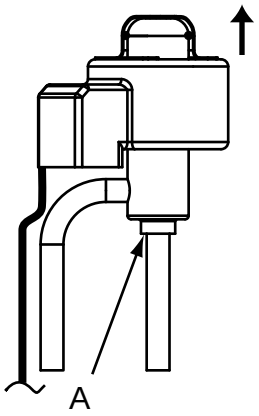
<Composition>

Linear expansion valve is separable into the main body and the coil as shown in the diagram below.



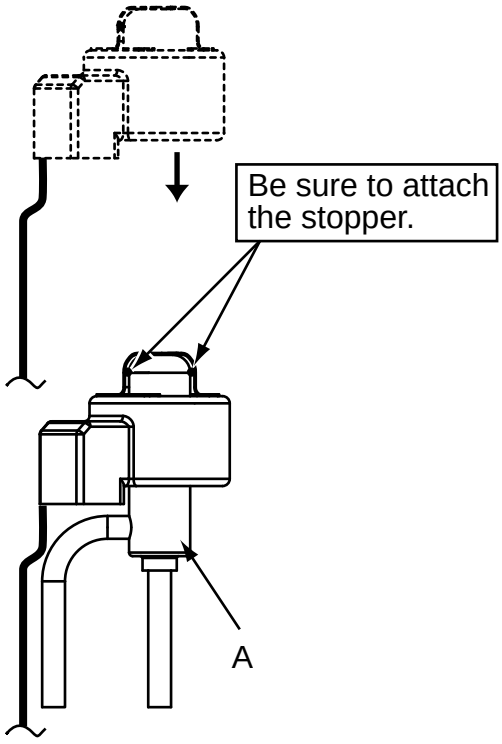
<How to detach the coil>

Hold the lower part of the main body (shown as A) firmly so that the main body does not move and detach the coil by pulling it upward.
Be sure to detach the coil holding main body firmly. Otherwise pipes can bend due to pressure.



<How to attach the coil>

Hold the lower part of the main body (shown as A) firmly so that the main body does not move and attach the coil by inserting it downward into the main body. Then securely attach the coil stopper to main body. (At this time, be careful that stress is not added to lead wire and main body is not wound by lead wire.) If the stopper is not firmly attached to main body, coil may be detached from the main body and that can cause defective operation of linear expansion valve.
To prevent piping stress, be sure to attach the coil holding the main body of linear expansion valve firmly. Otherwise pipe may break.

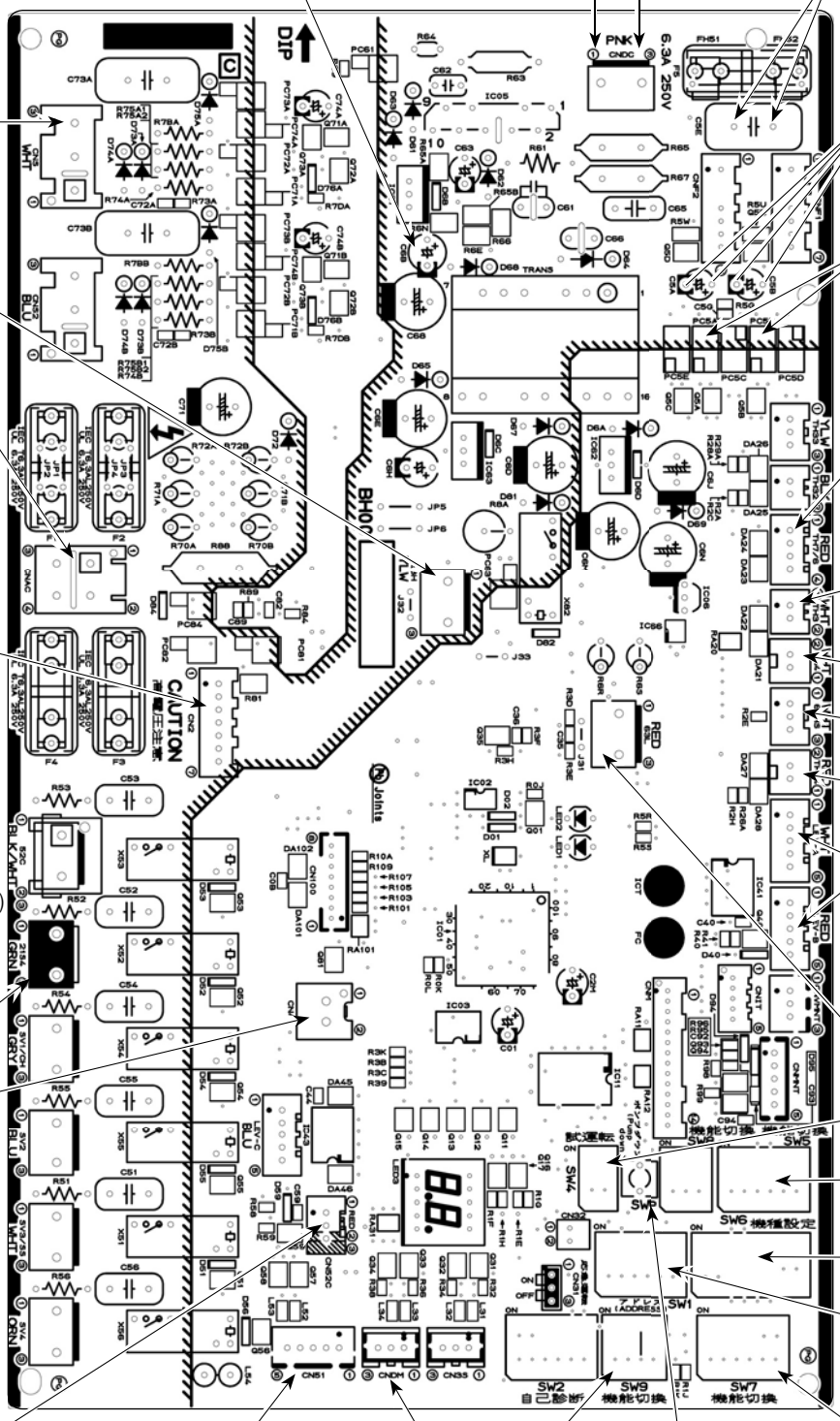


10-7. TEST POINT DIAGRAM

Outdoor controller circuit board

PUHZ-SW75VHA(-BS).UK
PUHZ-SW100VHA(-BS).UK
PUHZ-SW100YHA(-BS).UK
PUHZ-SW120VHA(-BS).UK
PUHZ-SW120YHA(-BS).UK

<CAUTION> TEST POINT① is high voltage.



CNDC
DC280V-380V Connect from outdoor power circuit board for VHA, connect from noise filter board for YHA(CNDC)

V_{CC} (TEST POINT ②) (voltage between pins of C6B): DC 15V

V_{DC} (TEST POINT ①) (voltage between pins of C5E) : DC250V-380V

CNS
(Indoor/outdoor unit connecting wire)

63H
High pressure switch

CNAC
② to ④: Power supply for outdoor controller circuit board (230V AC)
① to ③: Power supply for indoor and outdoor unit connection wire (230V AC)

CN2
Connect to the outdoor power circuit board (CN2)
①-⑤: Power circuit board → Transmitting signal to the controller circuit board (0-5V DC)
②-⑤: Zero cross signal (0-5V DC)
③-④: Not used ... (SW75V,100/120Y) 18V DC...(SW100/120V)
⑥-⑤: 16V DC
⑦-⑤: 16V DC
[⑤: ⊖ ①,②,⑥,⑦: ⊕]

21S4
Four-way valve

CN4
Transmission to outdoor power circuit board (CN4)

V_{SP} (TEST POINT ③) (voltage between pins of C5A, C5B): DC 0V (when stopped), DC 1– 6.5V (when operated)

V_{FG} (TEST POINT ④) (voltage between right pins of PC5C and PC5D, pin 3 and pin 4)

TH6
Thermistor <2-phase pipe>
TH7
Thermistor<Ambient>

TH3
Thermistor <Outdoor pipe>

TH4
Thermistor <Discharge>

63HS
High pressure sensor

TH34
Thermistor <Comp. surface>

LEV-A,-B
Linear expansion valve

63L
Low pressure switch (SW100/120)

SW4
Test operation

SW5
Function switch, Model select

SW6
Model select

SW1
Forced defrost, detect history record reset, refrigerant address

SW7
Demand control setting

SW9
Function switch

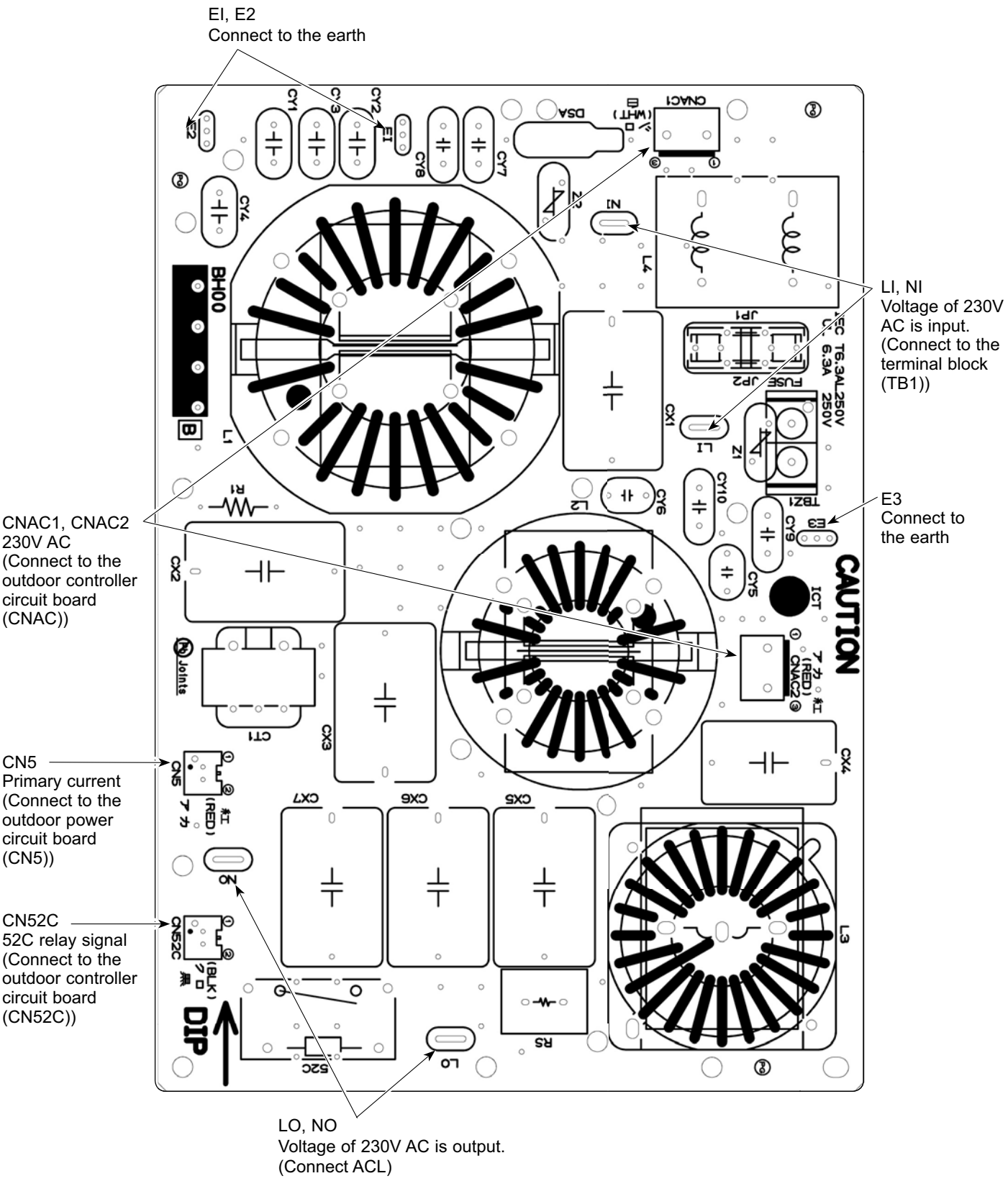
SWP
Pump down

CN52C
(Connect to the outdoor noise filter circuit board (SW75V)/ the outdoor power circuit board (SW100/120V))
Only for SW·VHA

CN51
External signal output
• Compressor operating signal
• Abnormal signal

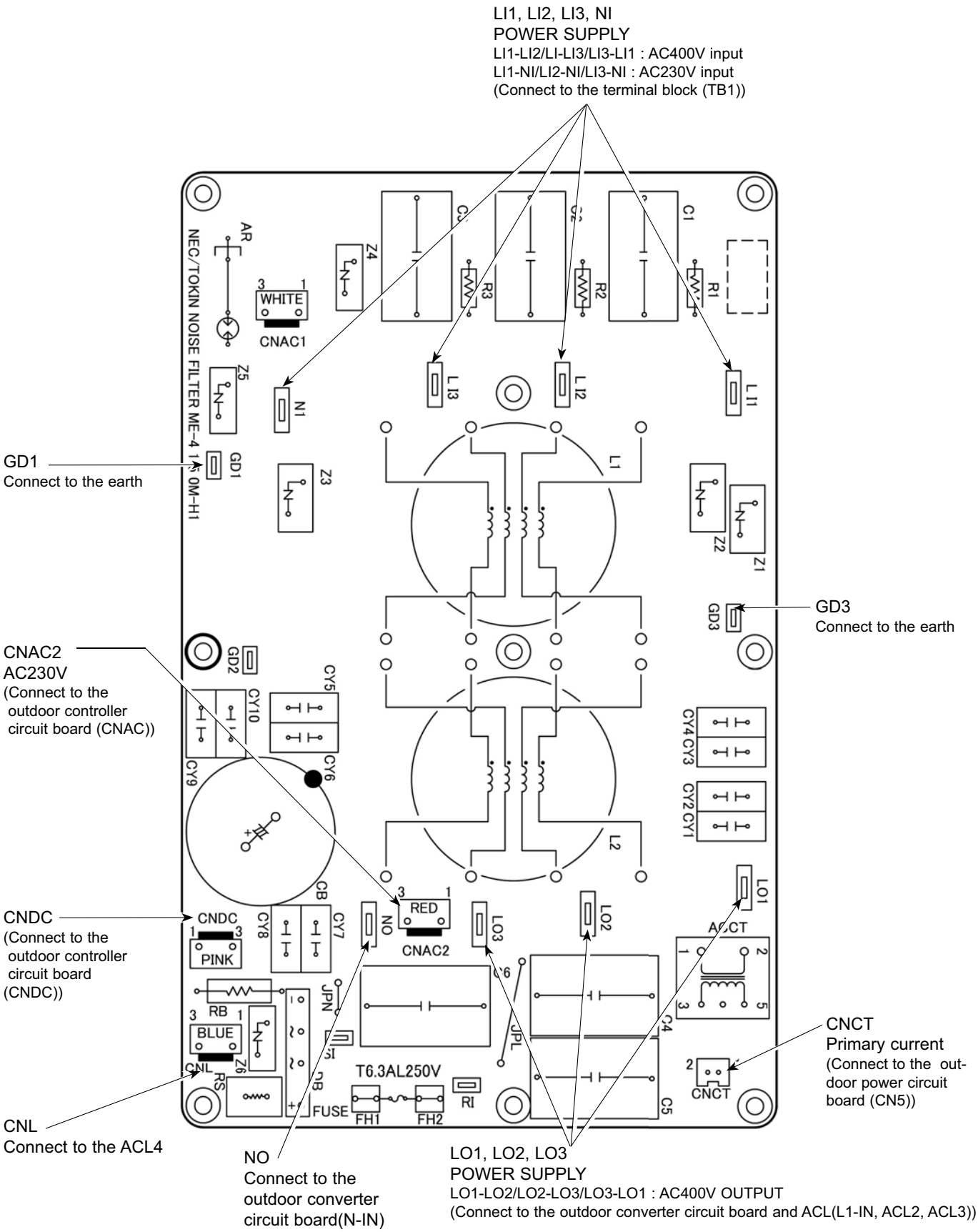
CNDM
① to ②: Input of low-level sound priority mode
① to ③: Input of external contact point

Outdoor noise filter circuit board
PUHZ-SW75VHA.UK
PUHZ-SW75VHA-BS.UK



Outdoor noise filter circuit board

PUHZ-SW100YHA.UK **PUHZ-SW100YHA-BS.UK**
PUHZ-SW120YHA.UK **PUHZ-SW120YHA-BS.UK**



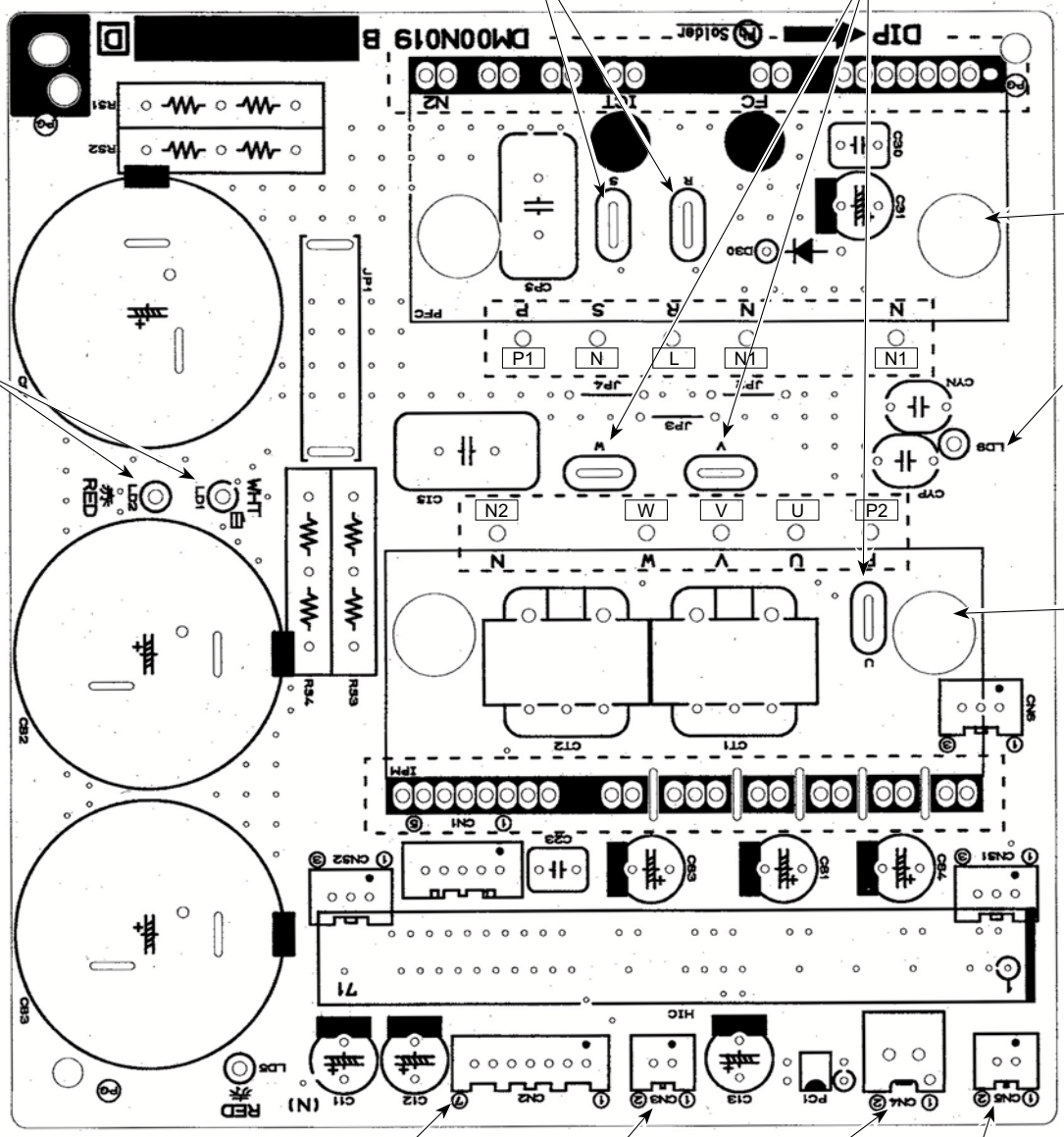
Outdoor power circuit board
PUHZ-SW75VHA.UK
PUHZ-SW75VHA-BS.UK

Brief Check of DIP-IPM and DIP-PFC
* Usually, they are in a state of being short-circuited if they are broken.
  Measure the resistance in the following points (connectors, etc.).
  If they are short-circuited, it means that they are broken.
1. Check of DIP-IPM
  P2 - U , P2 - V , P2 - W , N2 - U , N2 - V , N2 - W
2. Check of DIP-PFC
  P1 - L , P1 - N , L - N1 , N - N1

Note:The marks L , N , N1 , N2 , P1 , P2 , U , V and W shown in the diagram are not actually printed on the board.

R, S
Connect to the ACL
230V AC

U, V, W
Connect to the compressor (MC)
Voltage among phases: 5V to 180V AC



LD1-LD2
280-380V DC
Connect to
the outdoor
controller
circuit board
(CNDC)

LD9
Connect to
the earth

CN2
Connect to the outdoor controller circuit board (CN2)
①-⑤:Outdoor power circuit board → Transmitting signal to the outdoor controller circuit board (0-5V DC)
②-⑤: Zero cross signal (0-5V DC)
③-④: Not used
⑥-⑤: 16V DC
⑦-⑤: 16V DC
[①, ②, ⑥, ⑦ : ⊕ ⑤ : ⊖]

CN3
Thermistor
<Heatsink>
(TH8)

CN4
Connect from the
outdoor controller
circuit board
(CN4)

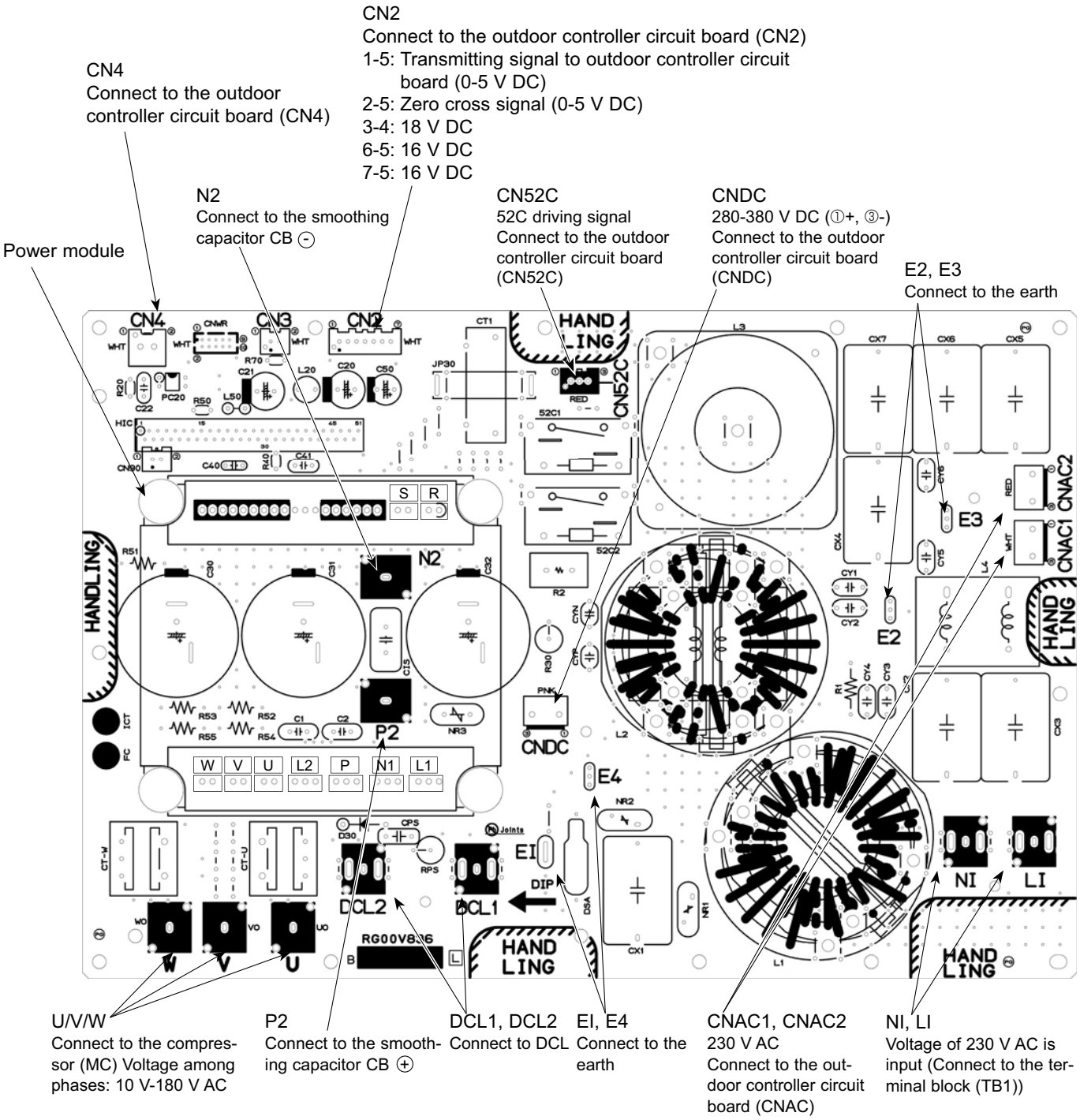
CN5
Primary current detection
(Connect to the outdoor
noise filter circuit board
(CN5))

Outdoor power circuit board
PUHZ-SW100VHA.UK
PUHZ-SW100VHA-BS.UK
PUHZ-SW120VHA.UK
PUHZ-SW120VHA-BS.UK

Brief Check of POWER MODULE
* Usually, they are in a state of being short-circuited if they are broken.
Measure the resistance in the following points (connectors, etc.).
If they are short-circuited, it means that they are broken.

1. Check of POWER MODULE
① Check of DIODE circuit
R - L1, S - L1, R - N1, S - N1
② Check of IGBT circuit
L2 - N1
③ Check of INVERTER circuit
P - U, P - V, P - W, N1 - U, N1 - V, N1 - W

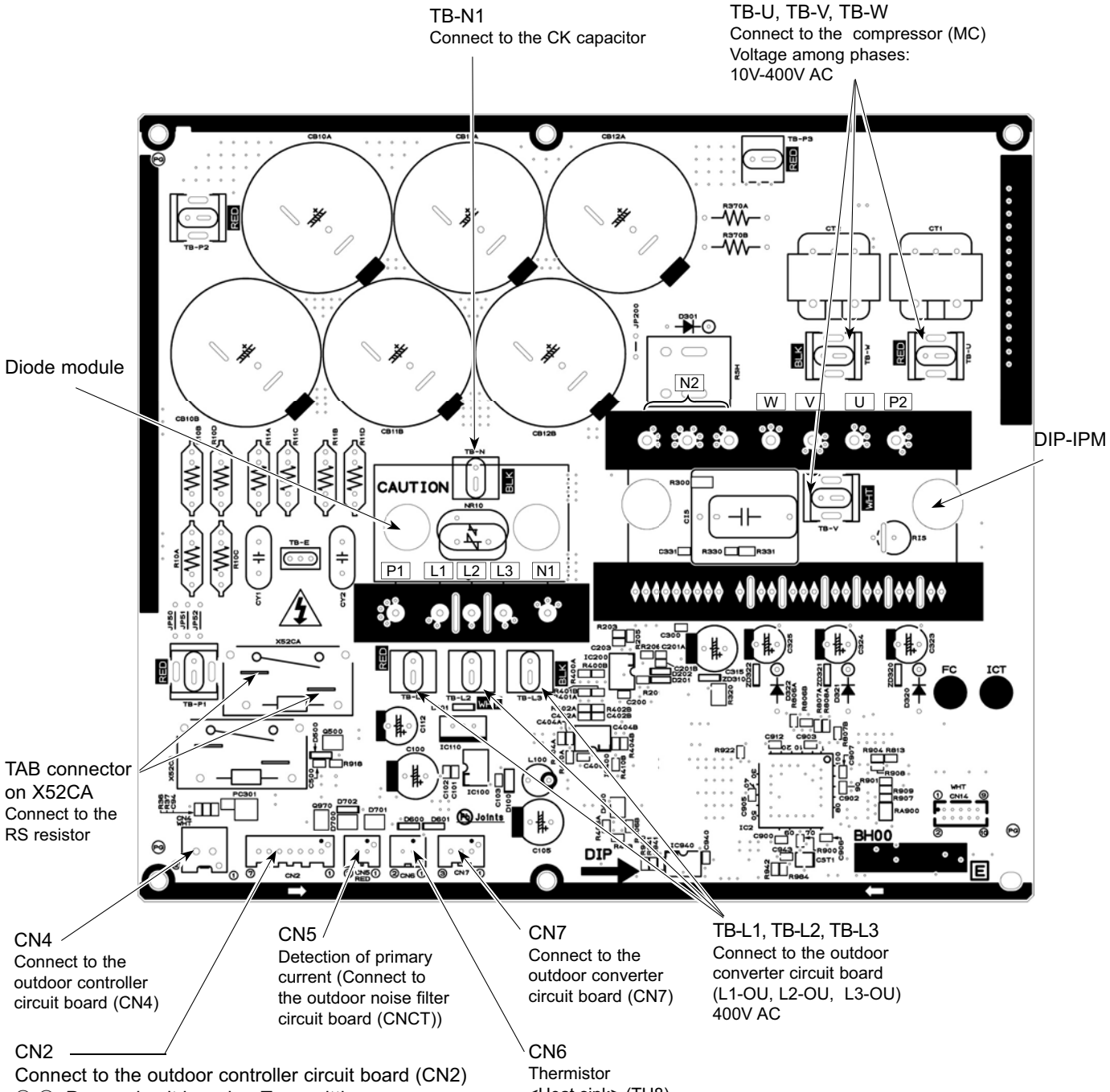
Note: The marks R, S, L1, L2, P, N1, U, V and W shown in the diagram are not actually printed on the board.


CN4
Connect to the outdoor controller circuit board (CN4)
CN2
Connect to the outdoor controller circuit board (CN2)
1-5: Transmitting signal to outdoor controller circuit board (0-5 V DC)
2-5: Zero cross signal (0-5 V DC)
3-4: 18 V DC
6-5: 16 V DC
7-5: 16 V DC
Power module
N2
Connect to the smoothing capacitor CB ⊖
CN52C
52C driving signal
Connect to the outdoor controller circuit board (CN52C)
CNDC
280-380 V DC (①+, ③-)
Connect to the outdoor controller circuit board (CNDC)
E2, E3
Connect to the earth
U/V/W
Connect to the compressor (MC) Voltage among phases: 10 V-180 V AC
P2
Connect to the smoothing capacitor CB ⊕
DCL1, DCL2
Connect to DCL
EI, E4
Connect to the earth
CNAC1, CNAC2
230 V AC
Connect to the outdoor controller circuit board (CNAC)
NI, LI
Voltage of 230 V AC is input (Connect to the terminal block (TB1))

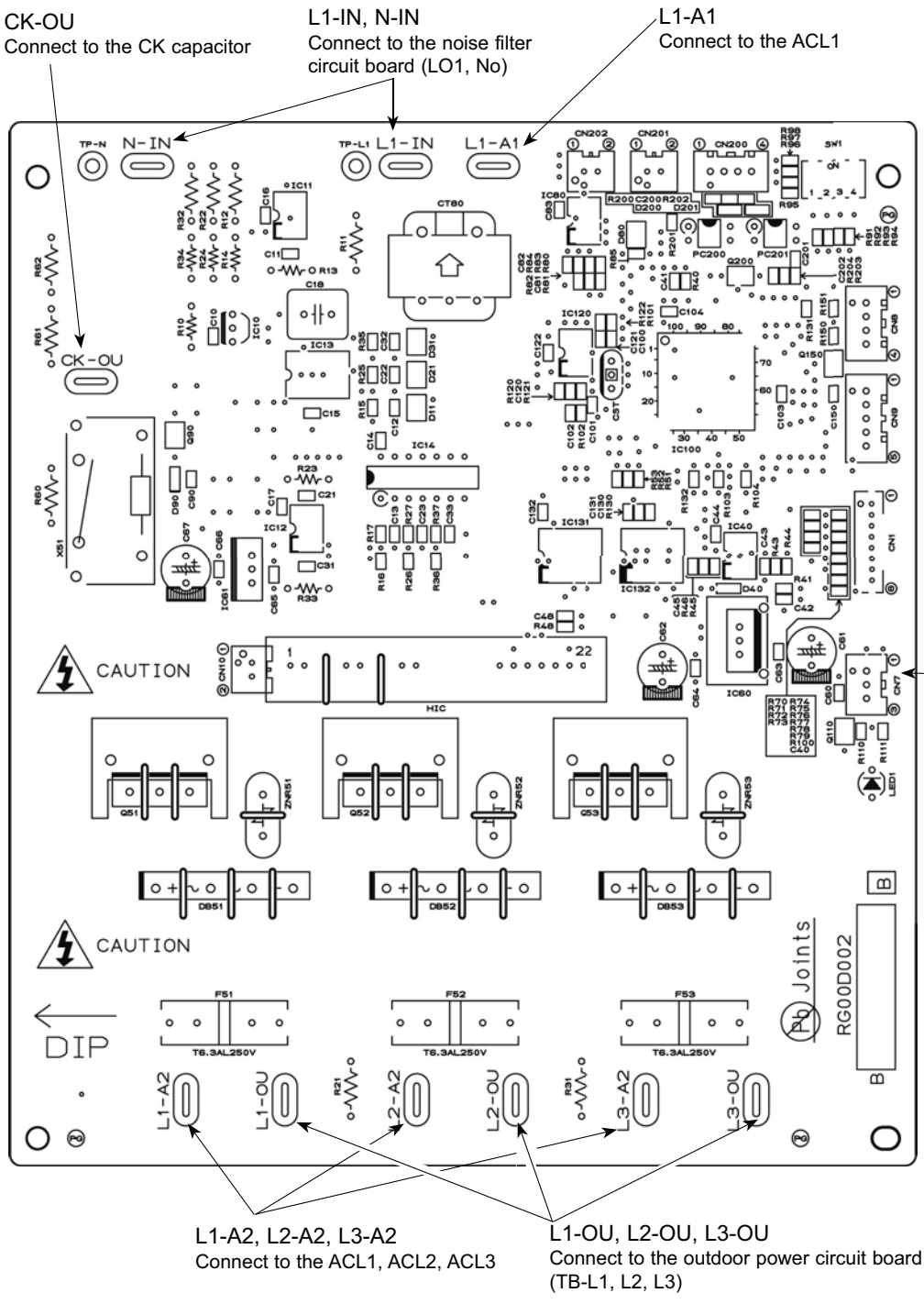
Outdoor power circuit board
PUHZ-SW100YHA.UK
PUHZ-SW100YHA-BS.UK
PUHZ-SW120YHA.UK
PUHZ-SW120YHA-BS.UK

Brief Check of POWER MODULE
* Usually, they are in a state of being short-circuited if they are broken.
Measure the resistance in the following points (connectors, etc.).
If they are short-circuited, it means that they are broken.
1. Check of DIODE MODULE
L1-P1, L2-P1, L3-P1, L1-N1 , L2-N1 , L3-N1
2. Check of DIP-IPM
P2-U , P2-V , P2-W , N2-U , N2-V , N2-W

Note: The marks L1 , L2, L3 , N1 ,N2,P1,P2,U , V and W shown in the diagram are not actually printed on the board.



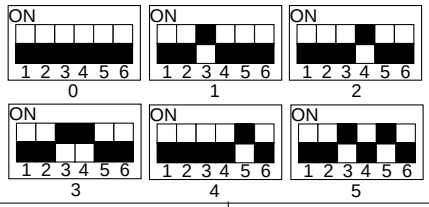
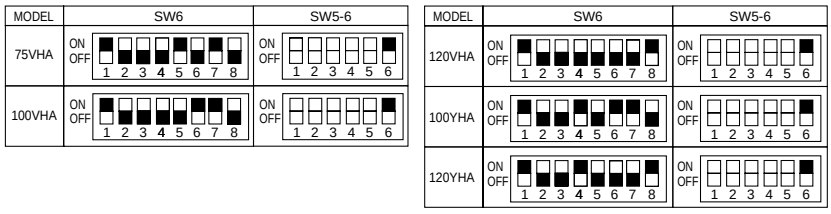
Outdoor converter circuit board
PUHZ-SW100YHA.UK
PUHZ-SW100YHA-BS.UK
PUHZ-SW120YHA.UK
PUHZ-SW120YHA-BS.UK



10-8. FUNCTION OF SWITCHES, CONNECTORS AND JUMPERS

(1) Function of switches

The black square (■) indicates a switch position.

Type of Switch	Switch	No.	Function	Action by the switch operation		Effective timing
				ON	OFF	
Dip switch	SW1	1	Forced defrost *1	Start	Normal	When compressor is working in heating operation. *1
		2	Abnormal history clear	Clear	Normal	Off or operating
		3	Refrigerant address setting			When power supply ON
		4				
		5				
		6				
	SW4	1	Test run	Operating	OFF	Under suspension
		2	Test run mode setting	Heating	Cooling	
Push switch	SWP		Pump down	Start	Normal	Under suspension
Dip switch	SW5	1	No function	—	—	—
		2	Power failure automatic recovery *2	Auto recovery	No auto recovery	When power supply ON
		3,4,5	No function	—	—	—
		6	model select	Following SW5-6 reference		
	SW7 *4	1	Setting of demand control *3	SW7-1 / SW7-2 / Power consumption (Demand switch ON): OFF / OFF / 0% (Operation stop); ON / OFF / 50%; OFF / ON / 75%		Always
		2				
		3	No function	—	—	—
		4	Breaker size setting *Only SW75	SW7 4 / SW7 5 / Breaker size: Both for indoor unit and outdoor unit / Only for outdoor unit: OFF OFF 25A (Default) 20A; OFF ON 20A 16A; ON ON 16A —		When power supply ON
		5				
		6	Defrost setting	For high humidity	Normal	Always
	SW8	1	Use of existing pipe	Used	Not used	Always
		2	No function	—	—	—
		3	No function	—	—	—
	SW9	1	No function	—	—	—
		2	Function switch	Valid	Normal	Always
		3,4	No function	—	—	—
	SW6	1	Model select			
		2				
		3				
		4				
		5				
		6				
		7				
		8				
	SW5	6				

※1 Forced defrost should be done as follows.
①Change the DIP SW1-1 on the outdoor controller board from OFF to ON.
②Forced defrost will start by the above operation ① if all these conditions written below are satisfied.
- Heat mode setting
- 10 minutes have passed since compressor started operating or previous compulsory defrosting finished.
- Pipe temperature is less than or equal to 8℃.

Forced defrost will finish if certain conditions are satisfied.
Forced defrost can be done if above conditions are satisfied when DIP SW1-1 is changed from OFF to ON.
After DIP SW1-1 is changed from OFF to ON, there is no problem if DIP SW1-1 is left ON or changed to OFF again. This depends on the service conditions.

※2 'Power failure automatic recovery' can be set by either remote controller or this DIP SW. If one of them is set to ON, 'Auto recovery' activates. Please set "Auto recovery" basically by remote controller because all units do not have DIP SW. Please refer to the indoor unit installation manual.

※3 SW7-1,2 are used for demand control. SW7-1,2 are effective only at the demand control. (Refer to next page : Special function (b))

※4 Please do not use SW7-3~6 usually. Trouble might be caused by the usage condition.

(2) Function of connector

Types	Connector	Function	Action by open/ short operation		Effective timing
			Short	Open	
Connector	CN31	Emergency operation	Start	Normal	When power supply ON

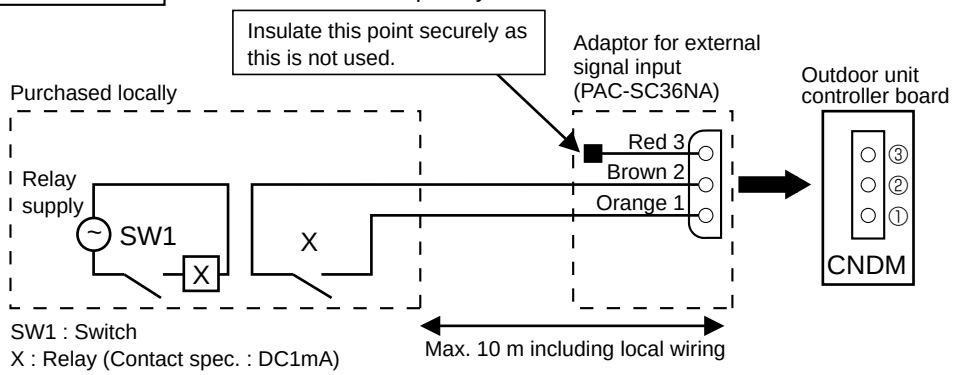
Special function

(a) Low-level sound priority mode (Local wiring)

Unit enters into Low-level sound priority mode by external signal input setting.
Inputting external signals to the outdoor unit decreases the outdoor unit operation sound 3 to 4 dB lower than that of usual.
Adding a commercial timer or on-off switch contactor setting to the CNDM connector which is optional contactor for demand input located on the outdoor controller board enables to control compressor operation frequency.
※ The performance depends on the load of conditioned outdoor temperature.

How to wire

<Low-level sound priority mode circuit>



1) Make the circuit as shown above with Adaptor for external signal input (PAC-SC36NA).
2) Turn SW1 to on for Low-level sound priority mode.
Turn SW1 to off to release Low-level sound priority mode and normal operation.

(b) On demand control (Local wiring)

Demand control is available by external input. In this mode, power consumption is decreased within the range of usual 0~100%.

How to wire

Basically, the wiring is the same as (a).
Connect an SW 1 which is procured at field to the between Orange and Red (1 and 3) of the Adaptor for external signal input (PAC-SC36NA), and insulate the tip of the brown lead wire.

It is possible to set it to the following power consumption (compared with ratings) by setting the SW7-1, 2.

SW7-1	SW7-2	Power consumption (SW1 on)
OFF	OFF	0% (Operation stop)
ON	OFF	50%
OFF	ON	75%

<Display function of inspection for outdoor unit>

The blinking patterns of both LED1 (green) and LED2 (red) indicate the types of abnormality when it occurs. Types of abnormality can be indicated in details by connecting an optional part “A-Control Service Tool (PAC-SK52ST)” to connector CNM on outdoor controller board.

[Display]

(1)Normal condition

Unit condition	Outdoor controller board		A-Control Service Tool	
	LED1 (Green)	LED2 (Red)	Error code	Indication of the display
When the power is turned on	Lighted	Lighted	—⇔—	Alternately blinking display
When unit stops	Lighted	Not lighted	00, etc.	Operation mode
When compressor is warming up	Lighted	Not lighted	08, etc.	
When unit operates	Lighted	Lighted	C5, H7 etc.	

(2)Abnormal condition

Indication		Error		
Outdoor controller board		Contents	Error code ※1	Inspection method
LED1 (Green)	LED2 (Red)			
1 blinking	2 blinking	Connector(63L) is open.	F3	①Check if connector (63H or 63L) on the outdoor controller board is not disconnected. ②Check continuity of pressure switch (63H or 63L) by tester.
		Connector(63H) is open.	F5	
		2 connectors are open.	F9	
2 blinking	1 blinking	Miswiring of I/F or FTC or outdoor unit connecting wire, excessive number of indoor units (4 units or more)	—	①Check if I/F or FTC or outdoor connecting wire is connected correctly. ②Check if 4 or more I/F or FTC units are connected to outdoor unit. ③Check if noise entered into I/F or FTC or outdoor connecting wire or power supply. ④Re-check error by turning off power, and on again.
		Miswiring of I/F or FTC or outdoor unit connecting wire (converse wiring or disconnection)	—	
		Startup time over	—	
	2 blinking	I/F or FTC or outdoor unit communication error (signal receiving error) is detected by FTC unit.	E6	①Check if I/F or FTC or outdoor connecting wire is connected correctly. ②Check if noise entered into I/F or FTC or outdoor connecting wire or power supply. ③Check if noise entered into I/F or FTC or outdoor controller board. ④Re-check error by turning off power, and on again.
		I/F or FTC or outdoor unit communication error (signal receiving error) is detected by outdoor unit.	— (E8)	
		I/F or FTC or outdoor unit communication error (transmitting error) is detected by outdoor unit.	— (E9)	
	3 blinking	Remote controller signal receiving error is detected by remote controller.	E0	①Check if connecting wire of I/F or FTC unit or remote controller is connected correctly. ②Check if noise entered into transmission wire of remote controller. ③Re-check error by turning off power, and on again.
		Remote controller transmitting error is detected by remote controller.	E3	
		Remote controller signal receiving error is detected by I/F or FTC unit.	E4	
		Remote controller transmitting error is detected by I/F or FTC unit.	E5	
	4 blinking	Error code is not defined.	EF	①Check if noise entered into transmission wire of remote controller. ②Check if noise entered into I/F or FTC or outdoor connecting wire. ③Re-check error by turning off power, and on again.

※1 Error code displayed on remote controller

※2 Refer to Technical manual of ATW, I/F, FTC.

Indication		Error			
Outdoor controller board		Contents	Error code ※1	Inspection method	Detailed reference page
LED1 (Green)	LED2 (Red)				
3 blinking	1 blinking	Abnormality of comp. surface thermistor(TH34) and discharging temperature (TH4)	U2	①Check if stop valves are open. ②Check if connectors (TH4, TH34, LEV-A, and LEV-B) on outdoor controller board are not disconnected. ③Check if unit is filled with specified amount of refrigerant. ④Measure resistance values among terminals on indoor valve and outdoor linear expansion valve using a tester.	P.24
		Abnormality of superheat due to low discharge temperature	U7		P.25
	2 blinking	Abnormal high pressure (High pressure switch 63H operated.)	U1	①Check if indoor/outdoor units have a short cycle on their air ducts. ②Check if connector (63H/63L) on outdoor controller board is not disconnected. ③Check if heat exchanger and filter is not dirty. ④Measure resistance values among terminals on linear expansion valve using a tester.	P.24
		Abnormal low pressure (Low pressure switch 63L operated.)	UL		P.27
	3 blinking	Abnormality of outdoor fan motor rotational speed	U8	①Check the outdoor fan motor. ②Check if connector (TH3) on outdoor controller board is disconnected.	P.25
		Protection from overheat operation(TH3)	Ud		
	4 blinking	Compressor overcurrent breaking(Start-up locked)	UF	①Check if stop valves are open. ②Check looseness, disconnection, and converse connection of compressor wiring. ③Measure resistance values among terminals on compressor using a tester. ④Check if outdoor unit has a short cycle on its air duct.	P.27
		Compressor overcurrent breaking	UP		P.28
		Abnormality of current sensor (P.B.)	UH		P.27
		Abnormality of power module	U6		P.25
	5 blinking	Open/short of discharge thermistor (TH4) and comp. surface thermistor (TH34)	U3	①Check if connectors(TH3,TH4,TH6 ,TH7 and TH34)on outdoor controller board and connector (CN3) on outdoor power board are not disconnected. ②Measure resistance value of outdoor thermistors.	P.24
		Open/short of outdoor thermistors (TH3, TH6, TH7 and TH8)	U4		P.25
	6 blinking	Abnormality of heatsink temperature	U5	①Check if indoor/outdoor units have a short cycle on their air ducts. ②Measure resistance value of outdoor thermistor(TH8).	P.25
	7 blinking	Abnormality of voltage	U9	①Check looseness, disconnection, and converse connection of compressor wiring. ②Measure resistance value among terminals on compressor using a tester. ③Check the continuity of contactor (52C). ④Check if power supply voltage decreases. ⑤Check the wiring of CN52C. ⑥Check the wiring of CNAF.	P.26
4 blinking	1 blinking	Abnormality of room temperature thermistor (TH1)	P1	①Check if connectors (CN20, CN21, CN29 and CN44) on indoor controller board are not disconnected. ②Measure resistance value of indoor thermistors.	※2
		Abnormality of pipe temperature thermistor /Liquid (TH2)	P2		※2
		Abnormality of pipe temperature thermistor/Condenser-Evaporator	P9		※2
	2 blinking	Abnormality of drain sensor (DS) Float switch(FS) connector open	P4	①Check if connector (CN31)(CN4F) on indoor controller board is not disconnected. ②Measure resistance value of indoor thermistors. ③Measure resistance value among terminals on drain-up machine using a tester. ④Check if drain-up machine works. ⑤Check drain function.	※2
		Indoor drain overflow protection	P5		
	3 blinking	Freezing (cooling)/overheating (heating) protection	P6	①Check if indoor unit has a short cycle on its air duct. ②Check if heat exchanger and filter is not dirty. ③Measure resistance value on indoor and outdoor fan motors. ④Check if the inside of refrigerant piping is not clogged.	※2
	4 blinking	Abnormality of pipe temperature	P8	①Check if indoor thermistors(TH2 and TH5) are not disconnected from holder. ②Check if stop valve is open. ③Check converse connection of extension pipe. (on plural units connection) ④Check if indoor/outdoor connecting wire is connected correctly. (on plural units connection)	※2

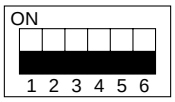
※1 Error code displayed on remote controller
※2 Refer to service manual for indoor unit.

<Outdoor unit operation monitor function>

[When optional part 'A-Control Service Tool (PAC-SK52ST)' is connected to outdoor controller board (CNM)]

Digital indicator LED1 displays 2 digit number or code to inform operation condition and the meaning of error code by controlling DIP SW2 on 'A-Control Service Tool'.

Operation indicator SW2 : Indicator change of self diagnosis

SW2 setting	Display detail	Explanation for display	Unit
			

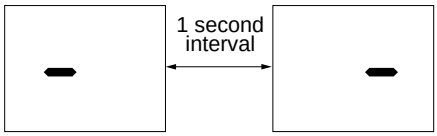
<Digital indicator LED1 working details>

(Be sure that the 1 to 6 in the SW2 are set to OFF.)

(1) Display when the power supply ON

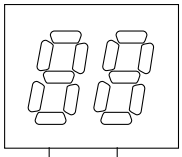
When the power supply ON, blinking displays by turns.

Wait for 4 minutes at the longest.

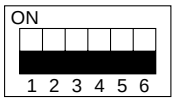


(2) When the display lights (Normal operation)

①Operation mode display.

LED1  (Lighting)

SW2



(Initial setting)

The tens digit : Operation mode

Display	Operation Model
O	OFF / FAN
C	COOLING / DRY ※
H	HEATING
d	DEFROSTING

*C5 is displayed during replacement operation.

②Display during error postponement

Postponement code is displayed when compressor stops due to the work of protection device.

Postponement code is displayed while error is being postponed.

The ones digit : Relay output

Display	Warming-up Compressor	Compressor	4-way valve	Solenoid valve
0	—	—	—	—
1	—	—	—	ON
2	—	—	ON	—
3	—	—	ON	ON
4	—	ON	—	—
5	—	ON	—	ON
6	—	ON	ON	—
7	—	ON	ON	ON
8	ON	—	—	—
A	ON	—	ON	—

(3) When the display blinks

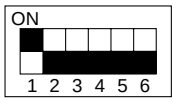
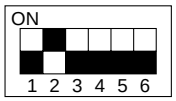
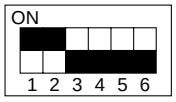
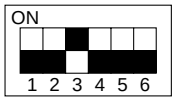
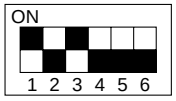
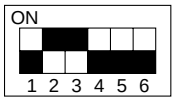
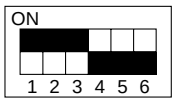
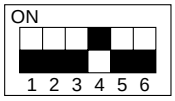
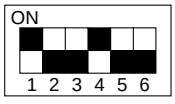
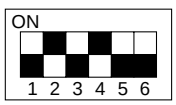
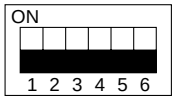
Inspection code is displayed when compressor stops due to the work of protection devices.

Display	Contents to be inspected (During operation)
U1	Abnormal high pressure (63H worked)
U2	Abnormal high discharging temperature and shell thermistor, shortage of refrigerant
U3	Open/short circuit of discharging thermistor(TH4) and comp. surface thermistor(TH34)
U4	Open/short of outdoor unit thermistors(TH3, TH6, TH7 and TH8)
U5	Abnormal temperature of heatsink
U6	Abnormality of power module
U7	Abnormality of superheat due to low discharge temperature
U8	Abnormality in outdoor fan motor
Ud	Overheat protection
UF	Compressor overcurrent interruption (When Comp. locked)
UH	Current sensor error
UL	Abnormal low pressure
UP	Compressor overcurrent interruption
P1~P8	Abnormality of indoor units
A0~A7	Communication error of M-NET system

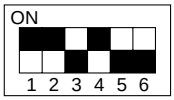
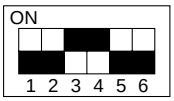
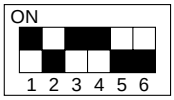
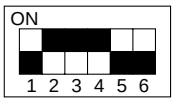
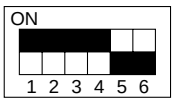
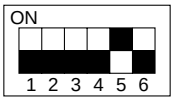
Display	Inspection unit
0	Outdoor unit
1	Indoor unit 1
2	Indoor unit 2
3	Indoor unit 3

Display	Contents to be inspected (When power is turned on)
F3	63L connector(red) is open.
F5	63H connector(yellow) is open.
F9	2 connectors(63H/63L) are open.
E8	Indoor/outdoor communication error (Signal receiving error) (Outdoor unit)
E9	Indoor/outdoor communication error (Transmitting error) (Outdoor unit)
EA	Miswiring of indoor/outdoor unit connecting wire, excessive number of indoor units (4 units or more)
Eb	Miswiring of indoor/outdoor unit connecting wire(converse wiring or disconnection)
EC	Startup time over
E0~E7	Communication error except for outdoor unit

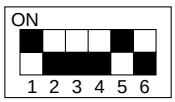
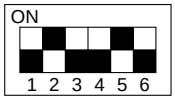
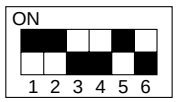
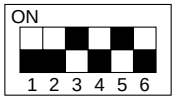
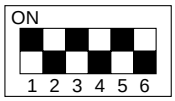
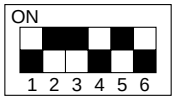
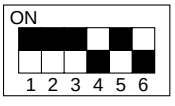
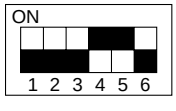
The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit
	Pipe temperature / Liquid (TH3) -40 – 90	-40 – 90 (When the coil thermistor detects 0℃ or below, "–" and temperature are displayed by turns.) (Example) When -10℃; 0.5 secs. 0.5secs. 2 secs. -□ →10 →□□	℃
	Discharge temperature (TH4) 3 – 217	3 – 217 (When the discharge thermistor detects 100℃ or more, hundreds digit, tens digit and ones digit are displayed by turns.) (Example) When 105℃; 0.5 secs. 0.5secs. 2 secs. □1 →05 →□□	℃
	Output step of outdoor FAN 0 – 10	0 – 10	Step
	The number of ON / OFF times of compressor 0 – 9999	0 – 9999 (When the number of times is 100 or more, hundreds digit, tens digit and ones digit are displayed by turns.) (Example) When 42500 times (425 ×100 times); 0.5 secs. 0.5secs. 2 secs. □4 →25 →□□	100 times
	Compressor integrating operation times 0 – 9999	0 – 9999 (When it is 100 hours or more, hundreds digit, tens digit and ones digit are displayed by turns.) (Example) When 2450 hours (245 ×10 hours); 0.5 secs. 0.5secs. 2 secs. □2 →45 →□□	10 hours
	Compressor operating current 0 – 50	0 – 50 ※Omit the figures after the decimal fractions.	A
	Compressor operating frequency 0 – 255	0 – 255 (When it is 100Hz or more, hundreds digit, tens digit and ones digit are displayed by turns. (Example) When 125Hz; 0.5 secs. 0.5secs. 2 secs. □1 →25 →□□	Hz
	LEV-A opening pulse 0 – 480	0 – 480 (When it is 100 pulse or more, hundreds digit, tens digit and ones digit are displayed by turns. (Example) When 150 pulse; 0.5 secs. 0.5secs. 2 secs. □1 →50 →□□	Pulse
	Error postponement code history (1) of outdoor unit	Postponement code display Blinking: During postponement Lighting: Cancellation of postponement "00" is displayed in case of no postponement.	Code display
	Operation mode on error occurring	Operation mode of when operation stops due to error is displayed by setting SW2 like below. (SW2) 	Code display

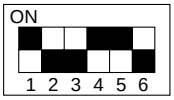
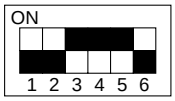
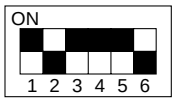
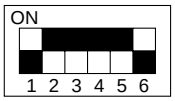
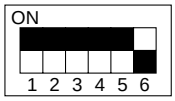
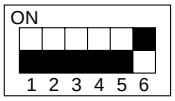
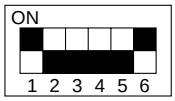
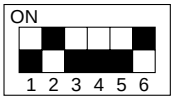
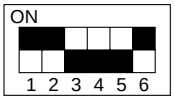
The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit
	Pipe temperature/Liquid (TH3) on error occurring -40 – 90	-40 – 90 (When the coil thermistor detects 0℃ or below, "–" and temperature are displayed by turns.) (Example) When –15℃; 0.5 secs. 0.5secs. 2 secs. -□ →15 →□□	℃
	Compressor temperature (TH4) or discharge temperature (TH4) on error occurring 3 – 217	3 – 217 (When the temperature is 100℃ or more, the hundreds digit, tens digit and ones digit are displayed by turns.) (Example) When 130℃; 0.5 secs. 0.5secs. 2 secs. □1 →30 →□□	℃
	Compressor operating current on error occurring 0 – 50	0 – 50	A
	Error code history (1) (latest) Alternate display of abnormal unit number and code	When no error history, " 0 " and "– –" are displayed by turns.	Code display
	Error code history (2) Alternate display of error unit number and code	When no error history, " 0 " and "– –" are displayed by turns.	Code display
	Thermostat ON time 0 – 999	0 – 999 (When it is 100 minutes or more, the hundreds digit, tens digit and ones digit are displayed by turns.) (Example) When 245 minutes; 0.5 secs. 0.5secs. 2 secs. □2 →45 →□□	Minute
	Test run elapsed time 0 – 120	0 – 120 (When it is 100 minutes or more, the hundreds digit, tens digit and ones digit are displayed by turns.) (Example) When 105 minutes; 0.5 secs. 0.5secs. 2 secs. □1 →05 →□□	Minute

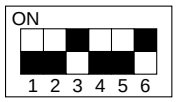
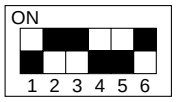
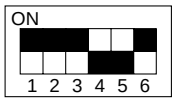
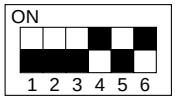
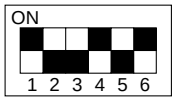
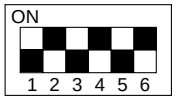
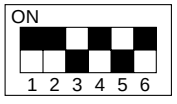
The black square (■) indicates a switch position.

<table>
<tr><th>SW2 setting</th><th>Display detail</th><th>Explanation for display</th><th>Unit</th></tr>
<tr><td> 
</td><td>The number of connected indoor units</td><td>0 – 3
(The number of connected indoor units are displayed.)</td><td>Unit</td></tr>
<tr><td> 
</td><td>Capacity setting display</td><td>Displayed as an outdoor capacity code.<table><tr><th>Capacity</th><th>Code</th></tr><tr><td>SW75V</td><td>14</td></tr><tr><td>SW100V, 100Y</td><td>20</td></tr><tr><td>SW120V, 120Y</td><td>25</td></tr></table></td><td>Code display</td></tr>
<tr><td> 
</td><td>Outdoor unit setting information</td><td>• The tens digit (Total display for applied setting)<table><tr><th>Setting details</th><th>Display details</th></tr><tr><td>H·P / Cooling only</td><td>0 : H·P 1 : Cooling only</td></tr><tr><td>Single phase / 3 phase</td><td>0 : Single phase 2 : 3 phase</td></tr></table>• The ones digit<table><tr><th>Setting details</th><th>Display details</th></tr><tr><td>Defrosting switch</td><td>0 : Normal 1 : For high humidity</td></tr></table>(Example) When heat pump, 3 phase and defrosting (normal) are set up, “20” is displayed.</td><td>Code display</td></tr>
<tr><td> 
</td><td>Indoor pipe temperature / Liquid (TH2(1))
Indoor 1
-39 – 88</td><td>-39 – 88
(When the temperature is 0℃ or less, “–” and temperature are displayed by turns.)</td><td>℃</td></tr>
<tr><td> 
</td><td>Indoor pipe temperature / Cond./Eva. (TH5(1))
Indoor 1
-39 – 88</td><td>-39 – 88
(When the temperature is 0℃ or less, “–” and temperature are displayed by turns.)</td><td>℃</td></tr>
<tr><td> 
</td><td>Indoor pipe temperature / Liquid (TH2(2))
Indoor 2
-39 – 88</td><td>-39 – 88
(When the temperature is 0℃ or less, “–” and temperature are displayed by turns.)</td><td>℃</td></tr>
<tr><td> 
</td><td>Indoor pipe temperature / Cond./Eva. (TH5(2))
Indoor 2
-39 – 88</td><td>-39 – 88
(When the temperature is 0℃ or less, “–” and temperature are displayed by turns.)</td><td>℃</td></tr>
<tr><td> 
</td><td>Indoor room temperature (TH1)
8 – 39</td><td>8 – 39</td><td>℃</td></tr>
</table>

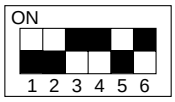
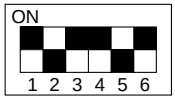
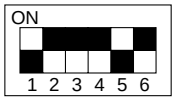
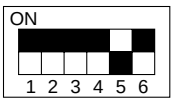
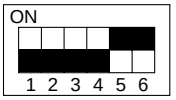
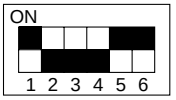
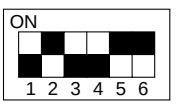
The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit
	Indoor setting temperature 17 – 30	17 – 30	℃
	Pressure saturation temperature (T_{63HS}) -39 – 88	-39 – 88 (When the temperature is 0℃ or less, "–" and temperature are displayed by turns.)	℃
	Ambient temperature (TH7) -39 – 88	-39 – 88 (When the temperature is 0℃ or less, "–" and temperature are displayed by turns.)	℃
	Outdoor heatsink temperature (TH8) -40 – 200	-40 – 200 (When the temperature is 0℃ or less, "–" and temperature are displayed by turns.) (When the thermistor detects 100℃ or more, hundreds digit, tens digit and ones digit are displayed by turns.)	℃
	Discharge superheat SHd 0 – 255 [Cooling = TH4 - T_{63HS} Heating = TH4 - T_{63HS}]	0 – 255 (When the temperature is 100°C or more, hundreds digit, tens digit and ones digit are displayed by turns.)	°C
	Sub cool. SC 0 – 130 [Cooling = T_{63HS} - TH3 Heating = T_{63HS} - TH2]	0 – FFFE (in hexadecimal notation) (When more than FF in hex (255 in decimal), the number is displayed in order of 16^3's and 16^2's, and 16^1's and 16^0's places. (Example) When 5000 cycles; 0.5 secs. 0.5 secs. 2 secs. □9 → C4 → □□	2 cycles
	Input current of outdoor unit	0 – 500 (When it is 100 or more, hundreds digit, tens digit and ones digit are displayed by turns.)	0.1 A
	LEV-B opening pulse	0 – 480 (When it is 100 pulse or more, hundreds digit, tens digit and ones digit are displayed by turns.)	Pulse
	U9 error detail history (latest)	<table><tr><th>Description</th><th>Display</th></tr><tr><td>(No error)</td><td>00</td></tr><tr><td>Overvoltage error</td><td>01</td></tr><tr><td>Undervoltage error</td><td>02</td></tr><tr><td>Input current sensor error L_1-phase open error</td><td>04</td></tr><tr><td>Abnormal power synchronous signal</td><td>08</td></tr><tr><td>PFC error (SW75VHA) (Overvoltage / Undervoltage / Overcurrent)</td><td>10</td></tr><tr><td>PFC/ IGBT error (SW·VHA) (Undervoltage)</td><td>20</td></tr></table>* Display examples for multiple errors: Overvoltage (01) + Undervoltage (02) = 03 Undervoltage (02) + Power-sync signal error (08) = 0A L_1 phase open error (04) + PFC error (10) = 14	Code display

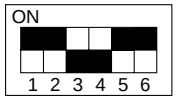
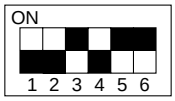
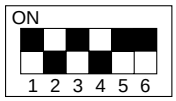
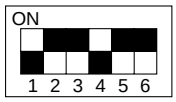
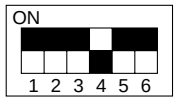
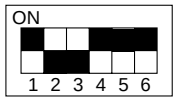
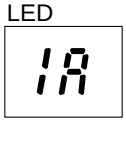
The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit
	DC bus voltage 180 – 370 (SW75/100/120V) 300 – 750 (SW100/120Y)	180 – 370 (SW75/100/120V) 300 – 750 (SW100/120Y) (When it is 100V or more, hundreds digit, tens digit and ones digit are displayed by turns.)	V
	Error postponement code history (2) of outdoor unit	Postponement code display Blinking: During postponement Lighting: Cancellation of postponement “00” is displayed in case of no postponement.	Code display
	Error postponement code history (3) of outdoor unit	Postponement code display Blinking: During postponement Lighting: Cancellation of postponement “00” is displayed in case of no postponement.	Code display
	Error code history (3) (Oldest) Alternate display of abnormal unit number and code.	When no error history, “0” and “– –“ are displayed by turns.	Code display
	Error thermistor display [When there is no error thermistor, “–“ is displayed.]	3: Outdoor pipe temperature/Liquid (TH3) 4: Discharge thermistor (TH4) 6: 2-phase pipe (TH6) 7: Ambient temperature (TH7) 8: Outdoor heatsink (TH8) 34: Comp. surface thermistor (TH34)	Code display
	Operation frequency on error occurring 0 – 255	0 – 255 (When it is 100Hz or more, hundreds digit, tens digit and ones digit are displayed by turns.) (Example) When 125Hz; 0.5 secs. 0.5secs. 2 secs. □1 →25 →□□	Hz
	Fan step on error occurring 0 – 10	0 – 10	Step

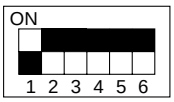
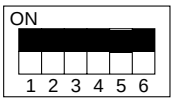
The black square (■) indicates a switch position.

SW2 setting	Display detail	Explanation for display	Unit
	LEV-A opening pulse on error occurring 0 – 480	0 – 480 (When it is 100 pulse or more, hundreds digit, tens digit and ones digit are displayed by turns.) (Example) When 130 pulse; 0.5 secs. 0.5secs. 2 secs. □1 →30 →□□	Pulse
	Indoor room temperature (TH1) on error occurring 8 – 39	8 – 39	℃
	Indoor pipe temperature / Liquid (TH2) on error occurring -39 – 88	-39 – 88 (When the temperature is 0°C or less, "–" and temperature are displayed by turns.) (Example) When –15°C; 0.5 secs. 0.5secs. 2 secs. -□ →15 →□□	℃
	Pressure saturation temperature (T_{63HS}) on error occurring	-39 – 88 (When the temperature is 0°C or less, "–" and temperature are displayed by turns.) (Example) When –15°C; 0.5 secs. 0.5secs. 2 secs. -□ →15 →□□	℃
	2-phase pipe (TH6) on error occurring -39 – 88	-39 – 88 (When the temperature is 0°C or less, "–" and temperature are displayed by turns.) (Example) When –15°C; 0.5 secs. 0.5secs. 2 secs. -□ →15 →□□	℃
	Ambient temperature (TH7) on error occurring -39 – 88	-39 – 88 (When the temperature is 0°C or less, "–" and temperature are displayed by turns.) (Example) When –15°C; 0.5 secs. 0.5secs. 2 secs. -□ →15 →□□	℃
	Outdoor heatsink temperature (TH8) on error occurring -40 – 200	-40 – 200 (When the temperature is 0°C or less, "–" and temperature are displayed by turns.) (When the temperature is 100°C or more, hundreds digit, tens digit and ones digit are displayed by turns.)	℃

The black square (■) indicates a switch position.

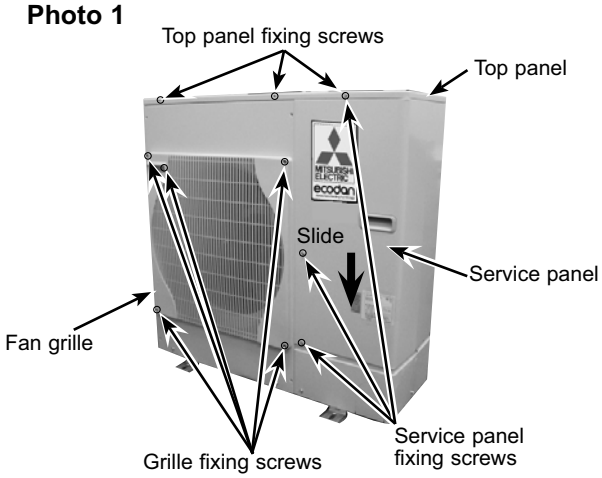
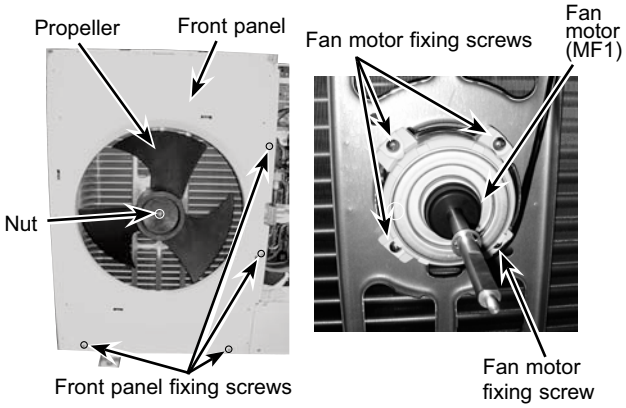
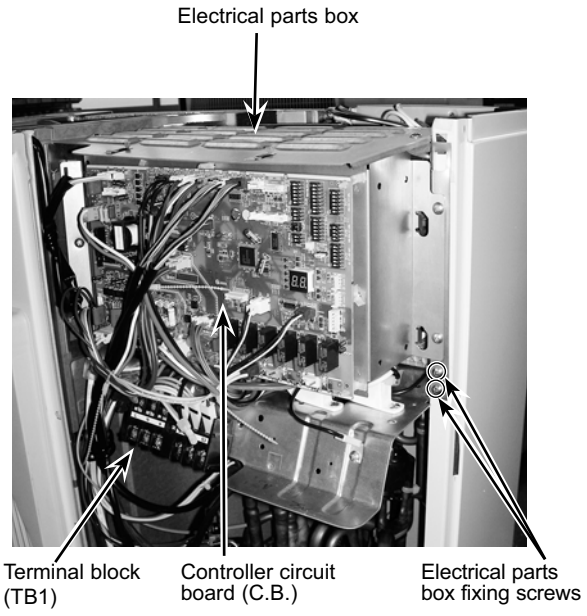
SW2 setting	Display detail	Explanation for display	Unit
	Discharge superheat on error occurring SHd 0 – 255 [Cooling = TH4 - T_{63HS} Heating = TH4 - T_{63HS}]	0 – 255 (When the temperature is 100°C or more, hundreds digit, tens digit and ones digit are displayed by turns.) (Example) When 150°C; 0.5 secs. 0.5secs. 2 secs. □1 →50 →□□	℃
	Sub cool on error occurring SC 0 – 130 [Cooling = T_{63HS} - TH3 Heating = T_{63HS} - TH2]	0 – 130 (When the temperature is 100°C or more, hundreds digit, tens digit and ones digit are displayed by turns.) (Example) When 115°C; 0.5 secs. 0.5secs. 2 secs. □1 →15 →□□	℃
	Thermo-on time until error stops 0 – 999	0 – 999 (When it is 100 minutes or more, hundreds digit, tens digit and ones digit are displayed by turns.) (Example) When 415 minutes; 0.5 secs. 0.5secs. 2 secs. □4 →15 →□□	Minute
	Indoor pipe temperature / Liquid (TH2 (3)) Indoor 3 -39 – 88	-39 – 88 (When the temperature is 0°C or less, "–" and temperature are displayed by turns.)	℃
	Indoor pipe temperature / Cond./Eva. (TH5 (3)) Indoor 3 -39 – 88	-39 – 88 (When the temperature is 0°C or less, "–" and temperature are displayed by turns.) When there is no indoor unit, "00" is displayed.	℃
	Controlling status of compressor operating frequency	The following code will be a help to know the operating status of unit. •The tens digit Display: 1 – Primary current control; 2 – Secondary current control •The ones digit (In this digit, the total number of activated control is displayed.) Display: 1 – Preventive control for excessive temperature rise of discharge temperature; 2 – Preventive control for excessive temperature rise of condensing temperature; 4 – Frosting preventing control; 8 – Preventive control for excessive temperature rise of heatsink (Example) The following controls are activated. • Primary current control • Preventive control for excessive temperature rise of condensing temperature • Preventive control for excessive temperature rise of heatsink LED 	Code display

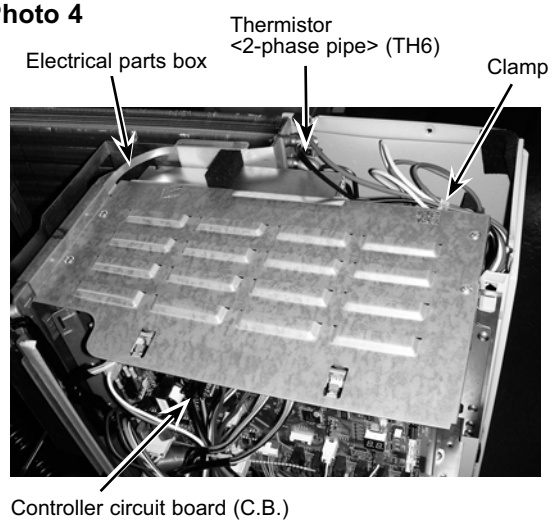
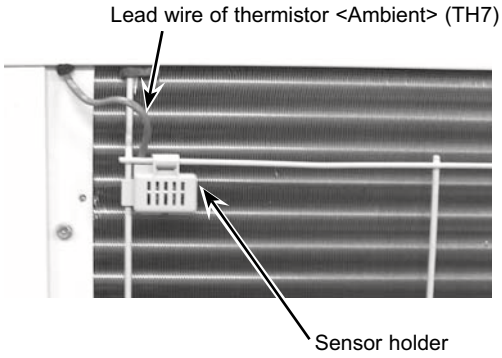
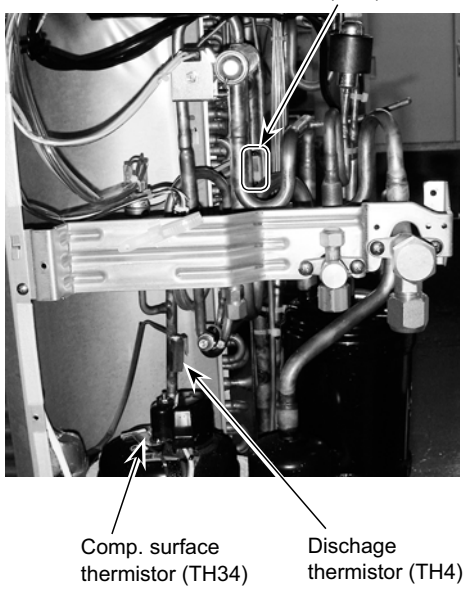
The black square (■) indicates a switch position.

<table>
<tr><th>SW2 setting</th><th>Display detail</th><th>Explanation for display</th><th>Unit</th></tr>
<tr><td> 
</td><td>Comp. surface temperature (TH34)
3 – 217</td><td>3 – 217
(When the comp.shell thermistor detects 100°C or more, hundreds digit, tens digit and ones digit are displayed by turns.)
(Example) When 105°C;
0.5 secs. 0.5secs. 2 secs.
□1 →05 →□□</td><td>℃</td></tr>
<tr><td> 
</td><td>U9 Error details (To be shown while error call is deferred.)</td><td>
<table>
<tr><th>Description</th><th>Display</th></tr>
<tr><td>(No error)</td><td>00</td></tr>
<tr><td>Overvoltage error</td><td>01</td></tr>
<tr><td>Undervoltage error</td><td>02</td></tr>
<tr><td>Input current sensor error
L_1-phase open error</td><td>04</td></tr>
<tr><td>Abnormal power synchronous signal</td><td>08</td></tr>
<tr><td>PFC error (SW75VHA)
(Overvoltage / Undervoltage / Overcurrent)</td><td>10</td></tr>
<tr><td>PFC/ IGBT error (SW·VHA)
(Undervoltage)</td><td>20</td></tr>
</table>
* Display examples for multiple errors:
Overvoltage (01) + Undervoltage (02) = 03
Undervoltage (02) + Power-sync signal error (08) = 0A
L_1 phase open error (04) + PFC error (10) = 14</td><td>Code display</td></tr>
</table>

11 DISASSEMBLY PROCEDURE

PUHZ-SW75VHA.UK PUHZ-SW75VHA-BS.UK

OPERATING PROCEDURE	PHOTOS & ILLUSTRATION
1. Removing the service panel and top panel (1) Remove 3 service panel fixing screws (5 × 12) and slide the hook on the right downward to remove the service panel. (2) Remove screws (3 for front, 3 for rear/5 × 12) of the top panel and remove it.	**Photo 1** 
2. Removing the fan motor (MF1) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove 5 fan grille fixing screws (5 × 12) to detach the fan grille. (See Photo 1) (4) Remove a nut (for right handed screw of M6) to detach the propeller. (See Photo 2-1) (5) Disconnect the connector CNF1 on controller circuit board in electrical parts box. (6) Remove 4 fan motor fixing screws (5 × 20) to detach the fan motor. (See Photo 2-2)	**Photo 2-1** **Photo 2-2** 
3. Removing the electrical parts box (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the indoor/outdoor connecting wire from terminal block. (4) Disconnect the connector CNF1, LEV-A and LEV-B on the controller circuit board. <Symbols on the board> • CNF1 : Fan motor • LEV-A, LEV-B : LEV (5) Disconnect the pipe-side connections of the following parts. • Thermistor <Liquid> (TH3) • Thermistor <Discharge> (TH4) • Thermistor <Ambient, 2-phase pipe> (TH7/6) • Thermistor <Heatsink> (TH8) • High pressure switch (63H) • 4-way valve coil (21S4) • Thermistor <Comp. surface> (TH34) (5) Remove the terminal cover and disconnect the compressor lead wire. (6) Remove an electrical parts box fixing screw (4 × 10) and detach the electrical parts box by pulling it upward. The electrical parts box is fixed with 2 hooks on the left and 1 hook on the right.	**Photo 3** 

OPERATING PROCEDURE	PHOTOS
4. Removing the thermistor <2-phase pipe> (TH6) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the connector TH7/6 (red) on the controller circuit board in the electrical parts box. (4) Loosen the clamp for the lead wire in the rear of the electrical parts box. (5) Pull out the thermistor <2-phase pipe> (TH6) from the sensor holder. **Note: In case of replacing thermistor <2-phase pipe> (TH6), replace it together with thermistor <Ambient> (TH7), since they are combined together.** **Refer to No.5 below to remove thermistor <Ambient>.**	**Photo 4** 
5. Removing the thermistor <Ambient> (TH7) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the connector TH7/6 (red) on the controller circuit board in the electrical parts box. (4) Loosen the clamp for the lead wire in the rear of the electrical parts box. (See Photo 4) (5) Pull out the thermistor <Ambient> (TH7) from the sensor holder. **Note: In case of replacing thermistor <Ambient> (TH7), replace it together with thermistor <2-phase pipe> (TH6), since they are combined together.** **Refer to No.4 above to remove thermistor <2-phase pipe>.**	**Photo 5** 
6. Removing the thermistor <Liquid> (TH3) and thermistor <Discharge> (TH4), thermistor <Comp. surface> (TH34) (1) Remove the service panel. (See Photo 1) (2) Disconnect the connectors, TH3 (white) and TH4 (white), TH34 (red) on the controller circuit board in the electrical parts box. (3) Loosen the clamp for the lead wire in the rear of the electrical parts box. (See Photo 4) (4) Pull out the thermistor <Liquid> (TH3) and thermistor <Discharge> (TH4) from the sensor holder. [Removing the thermistor<Comp. surface> (TH34)] (5) Remove the compressor cover (upper) and pull out the thermistor <Comp. surface> (TH34) from the holder of the compressor Comp.surface.	**Photo 6** 

OPERATING PROCEDURE

7. Removing the 4-way valve coil (21S4), LEV coil (LEV-A, LEV-B)

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)
(3) Remove the electrical parts box. (See Photo 3)
[Removing the 4-way valve coil]
(4) Remove 4-way valve coil fixing screw (M5 × 6).
(5) Remove the 4-way valve coil by sliding the coil toward you.
(6) Disconnect the connector 21S4 (green) on the controller board in the electrical parts box.
[Removing the LEV coil]
(4) Remove the LEV coil by sliding the coil upward.
(5) Disconnect the connectors, LEV A (white) and LEV B (red), on the controller circuit board in the electrical parts box.

8. Removing the 4-way valve

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)
(3) Remove the electrical parts box. (See Photo 3)
(4) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed.
(5) Remove 3 right side panel fixing screws (5 × 12) in the rear of the unit and then remove the right side panel.
(6) Remove the 4-way valve coil. (See Photo 7)
(7) Recover refrigerant.
(8) Remove the welded part of 4-way valve.
Note 1: Recover refrigerant without spreading it in the air.
Note 2: The welded part can be removed easily by removing the right side panel.
Note 3: When installing the 4-way valve, cover it with a wet cloth to prevent it from heating (120°C or more), then braze the pipes so that the inside of pipes are not oxidized.

9. Removing the LEV

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)
(3) Remove the electrical parts box. (See Photo 3)
(4) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed.
(5) Remove 3 right side panel fixing screws (5 × 12) in the rear of the unit and then remove the right side panel.
(6) Remove the LEV.
(7) Recover refrigerant.
(8) Remove the welded part of linear expansion valve.
Note 1: Recover refrigerant without spreading it in the air.
Note 2: The welded part can be removed easily by removing the right side panel.
Note 3: When installing the LEV, cover it with a wet cloth to prevent it from heating (120°C or more), then braze the pipes so that the inside of pipes are not oxidized.

PHOTOS

Photo 7

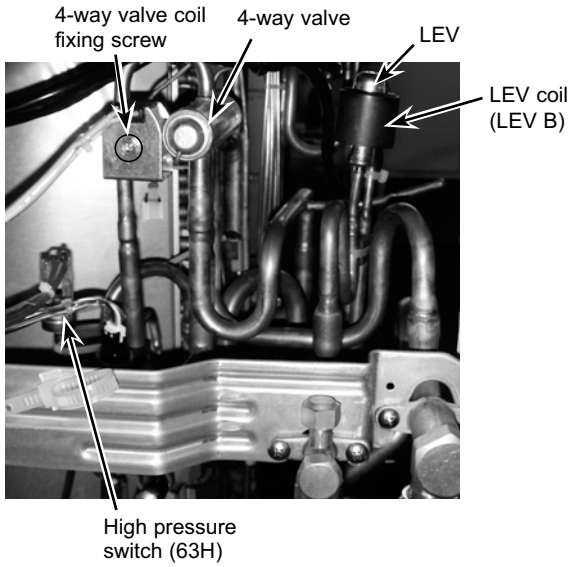
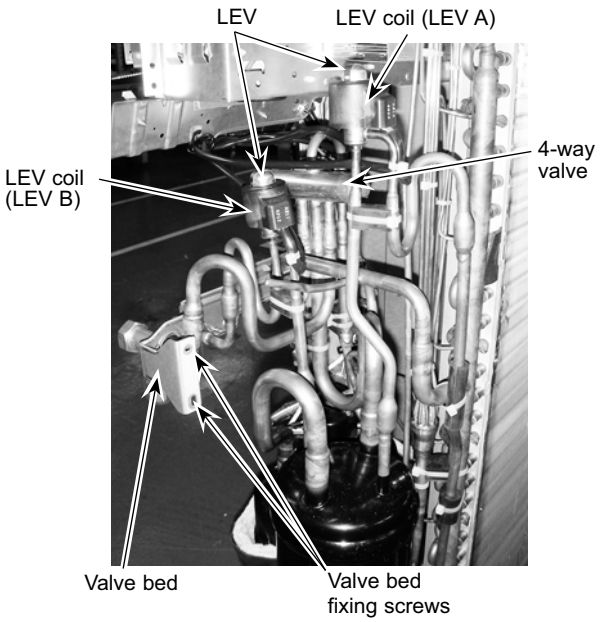
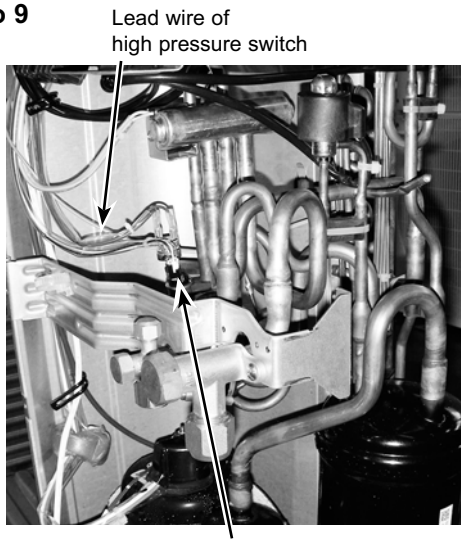
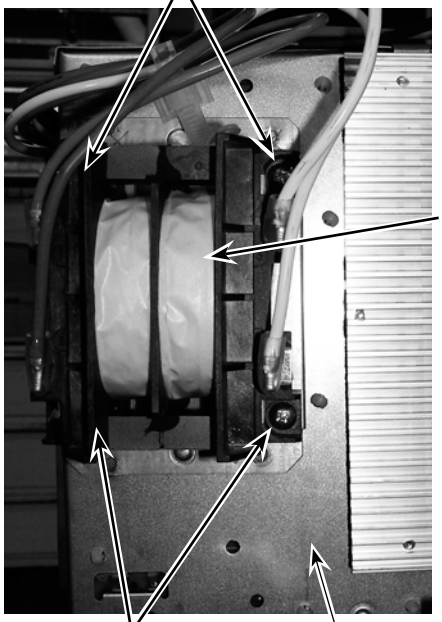
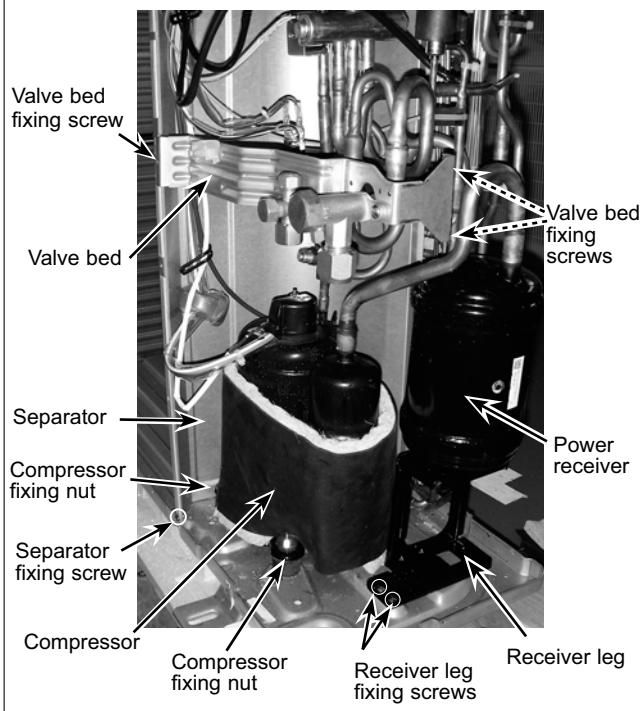
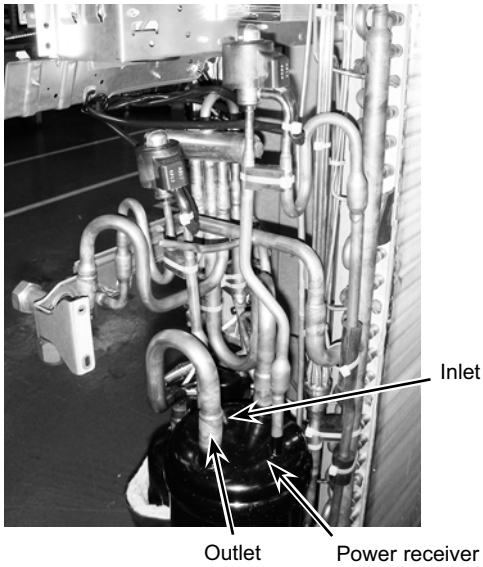


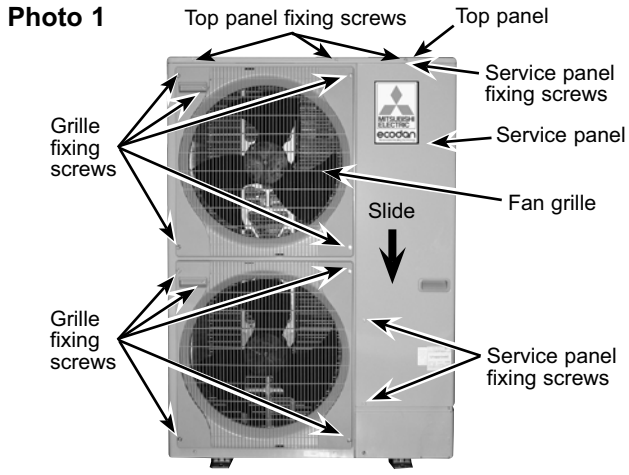
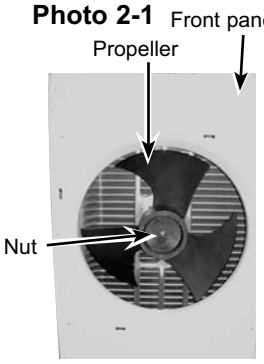
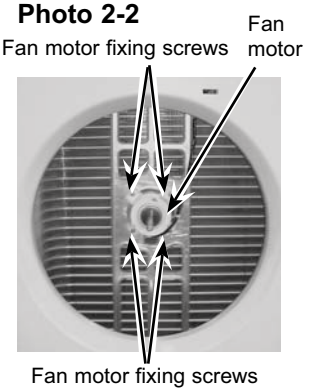
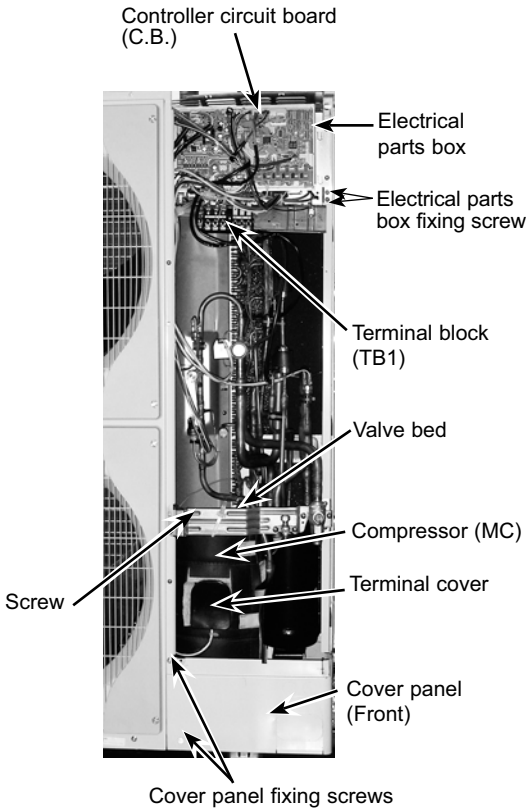
Photo 8

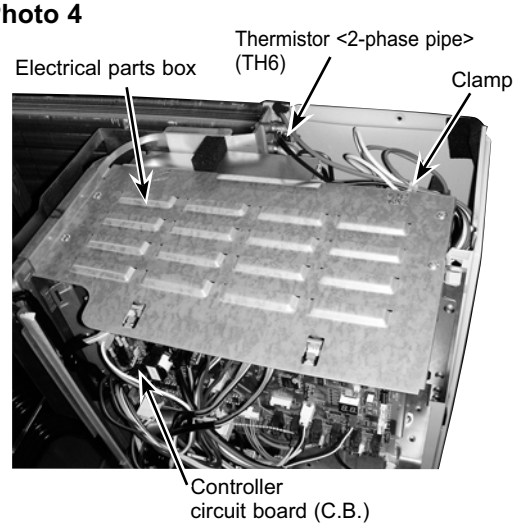
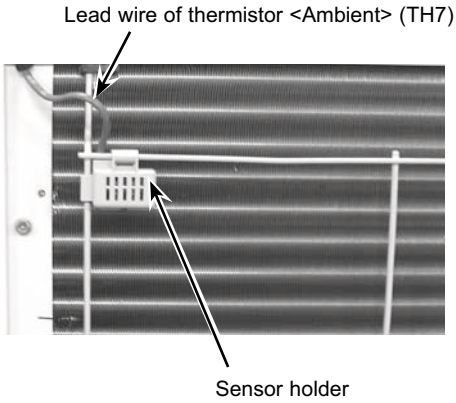


OPERATING PROCEDURE	PHOTOS
10. Removing the high pressure switch (63H) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the electrical parts box. (See Photo 3) (4) Remove 3 right side panel fixing screws (5 × 12) in the rear of the unit and remove the right side panel. (5) Pull out the lead wire of high pressure switch. (6) Recover refrigerant. (7) Remove the welded part of high pressure switch. **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.** **Note 3: When installing the high pressure switch, cover it with a wet cloth to prevent it from heating (100°C or more), then braze the pipes so that the inside of pipes are not oxidized.**	**Photo 9** 
11. Removing the reactor (ACL) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the electrical parts box. (See Photo 3) (4) Remove 4 reactor fixing screws (4 × 20) and remove the reactor. * The reactor is attached to the rear of the electrical parts box.	**Photo 10** 

OPERATING PROCEDURE	PHOTOS
12. Removing the compressor (MC) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove 2 front cover panel fixing screws (5 × 12) and remove the front cover panel. (See Photo 2-1) (4) Remove 2 back cover panel fixing screws (5 × 12) and remove the back cover panel. (5) Remove the electrical parts box. (See Photo 3) (6) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed. (7) Remove 3 right side panel fixing screws (5 × 12) in the rear of the unit then remove the right side panel. (8) Remove 3 separator fixing screws (4 × 10) and remove the separator. (9) Recover refrigerant. (10) Remove the 3 points of the compressor fixing nut using a spanner or a adjustable wrench. (11) Remove the welded pipe of compressor inlet and outlet then remove the compressor. **Note: Recover refrigerant without spreading it in the air.**	**Photo 11** 
13. Removing the power receiver (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove 2 front cover panel fixing screws (5 × 12) and remove the front cover panel. (See Photo 2-1) (4) Remove 2 back cover panel fixing screws (5 × 12) and remove the back cover panel. (5) Remove the electrical parts box. (See Photo 3) (6) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) then remove the valve bed. (7) Remove 3 right side panel fixing screws (5 × 12) in the rear of the unit then remove the right side panel. (8) Recover refrigerant. (9) Remove 4 welded pipes of power receiver inlet and outlet. (10) Remove 2 receiver leg fixing screws (4 × 10). (See Photo 11) **Note: Recover refrigerant without spreading it in the air.**	**Photo 12** 

PUHZ-SW100VHA.UK **PUHZ-SW100VHA-BS.UK**
PUHZ-SW120VHA.UK **PUHZ-SW120VHA-BS.UK**

OPERATING PROCEDURE	PHOTOS & ILLUSTRATION
1. Removing the service panel and top panel (1) Remove 3 service panel fixing screws (5 × 12) and slide the hook on the right downward to remove the service panel. (2) Remove screws (3 for front, 3 for rear/5 × 12) of the top panel and remove it.	**Photo 1** 
2. Removing the fan motor (MF1, MF2) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove 5 fan grille fixing screws (5 × 12) to detach the fan grille. (See Photo 1) (4) Remove a nut (for right handed screw of M6) to detach the propeller. (See Photo 2-1) (5) Disconnect the connectors, CNF1, CNF2 on controller circuit board in electrical parts box. (6) Remove 4 fan motor fixing screws (5 × 20) to detach the fan motor. (See Photo 2-2)	**Photo 2-1**  **Photo 2-2** 
3. Removing the electrical parts box (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the indoor/outdoor connecting wire from terminal block. (4) Disconnect the connector CNF1, CNF2, LEV-A and LEV-B on the controller circuit board. <Symbols on the board> • CNF1, CNF2 : Fan motor • LEV-A, LEV-B : LEV <Diagram symbol in the connector housing> • Thermistor <Liquid> (TH3) • Thermistor <Discharge> (TH4) • Thermistor <2-phase pipe, Ambient> (TH6/7) • High pressure switch (63H) • High pressure sensor (63HS) • Low pressure switch (63L) • 4-way valve coil (21S4) • Thermistor <Comp. surface> (TH34) (5) Remove the terminal cover and disconnect the compressor lead wire. (6) Remove an electrical parts box fixing screw (4 × 10) and detach the electrical parts box by pulling it upward. The electrical parts box is fixed with 2 hooks on the left and 1 hook on the right.	**Photo 3** 

OPERATING PROCEDURE	PHOTOS
4. Removing the thermistor <2-phase pipe> (TH6) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the connectors, TH7/6 (red), on the controller circuit board in the electrical parts box. (4) Loosen the clamp for the lead wire in the rear of the electrical parts box. (5) Pull out the thermistor <2-phase pipe> (TH6) from the sensor holder. **Note: In case of replacing thermistor <2-phase pipe> (TH6), replace it together with thermistor <Ambient> (TH7) since they are combined together.** **Refer to No.5 below to remove thermistor <Ambient>.**	**Photo 4** 
5. Removing the thermistor <Ambient> (TH7) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the connector TH7/6(red) on the controller circuit board in the electrical parts box. (4) Loosen the clamp for the lead wire in the rear of the electrical parts box. (See Photo 4) (5) Pull out the thermistor <Outdoor> (TH7) from the sensor holder. **Note: In case of replacing thermistor <Ambient> (TH7), replace it together with thermistor <2-phase pipe> (TH6), since they are combined together.** **Refer to No.4 above to remove thermistor <2-phase pipe>.**	**Photo 5** 
6. Removing the thermistor <Liquid> (TH3) and thermistor <Discharge> (TH4), thermistor <Comp. surface> (TH34) (1) Remove the service panel. (See Photo 1) (2) Disconnect the connectors, TH3 (white) and TH4 (white), TH34 (red) on the controller circuit board in the electrical parts box. (3) Loosen the clamp for the lead wire in the rear of the electrical parts box. (See Photo 4) (4) Pull out the thermistor <Liquid> (TH3), and thermistor <Discharge> (TH4) from the sensor holder. [Removing the thermistor<Comp. surface> (TH34)] (5) Remove the sound proof cover (upper) for compressor. (6) Pull out the thermistor <Comp. surface> (TH34) from the holder of the compressor shell.	**Photo 6**

OPERATING PROCEDURE

7. Removing the 4-way valve coil (21S4), and LEV coil (LEV(A), LEV(B))

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)

[Removing the 4-way valve coil]

(3) Remove 4-way valve coil fixing screw (M5 × 6).
(4) Remove the 4-way valve coil by sliding the coil toward you.
(5) Disconnect the connector 21S4 (green) on the controller circuit board in the electrical parts box.

[Removing the LEV coil]

(3) Remove the LEV coil by sliding the coil upward.
(4) Disconnect the connectors, LEV A (white) and LEV B (red), on the controller circuit board in the electrical parts box.

8. Removing the 4-way valve

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)
(3) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) then remove the valve bed.
(4) Remove 4 right side panel fixing screws (5 × 12) in the rear of the unit then remove the right side panel.
(5) Remove the 4-way valve coil. (See Photo 7)
(6) Recover refrigerant.
(7) Remove the welded part of 4-way valve.

9. Removing LEV

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)
(3) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) then remove the valve bed.
(4) Remove 4 right side panel fixing screws (5 × 12) in the rear of the unit then remove the right side panel.
(5) Remove the LEV. (See Photo 7)
(6) Recover refrigerant.
(7) Remove the welded part of LEV.

10. Removing the high pressure switch (63H)

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)
(3) Remove 3 right side panel fixing screws (5 × 12) in the rear of the unit and remove the right side panel.
(4) Pull out the lead wire of high pressure switch.
(5) Recover refrigerant.
(6) Remove the welded part of high pressure switch.

PHOTOS

Photo 7

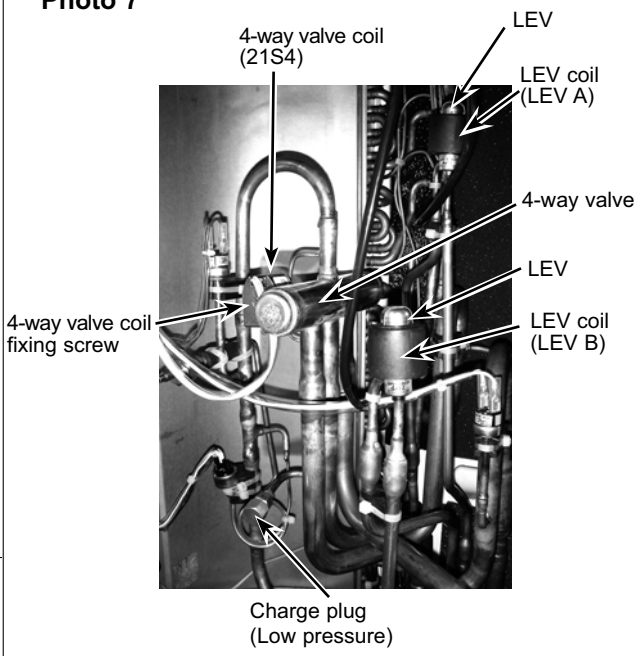
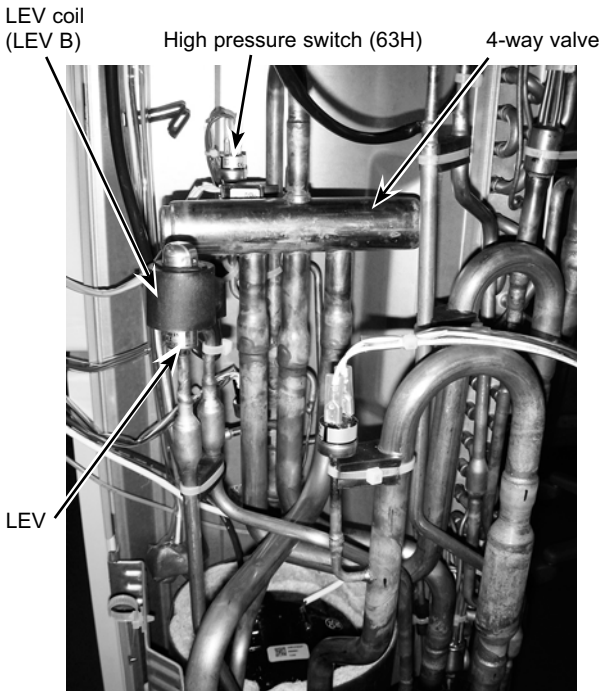
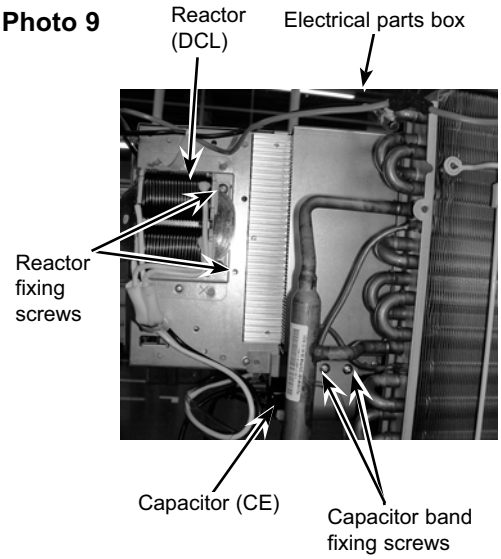
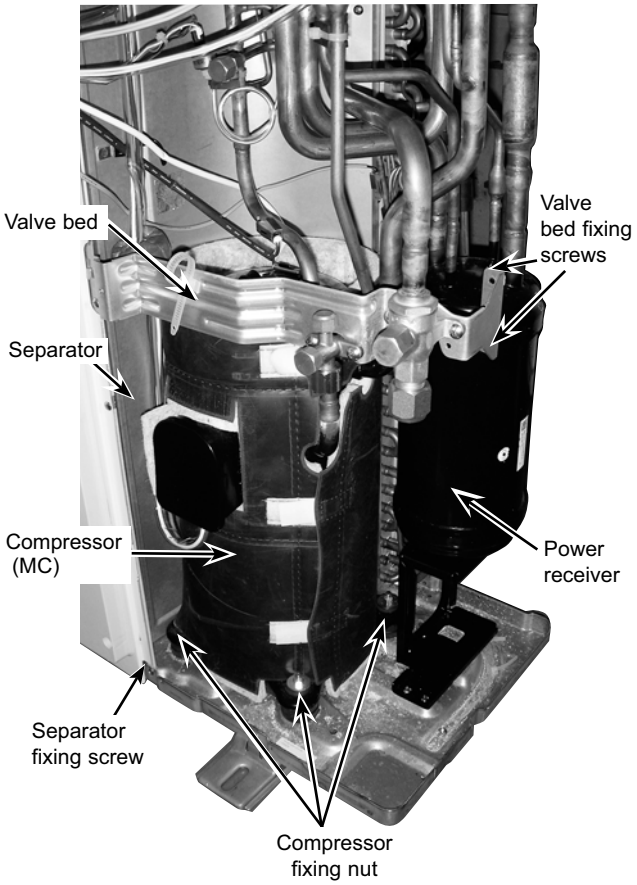


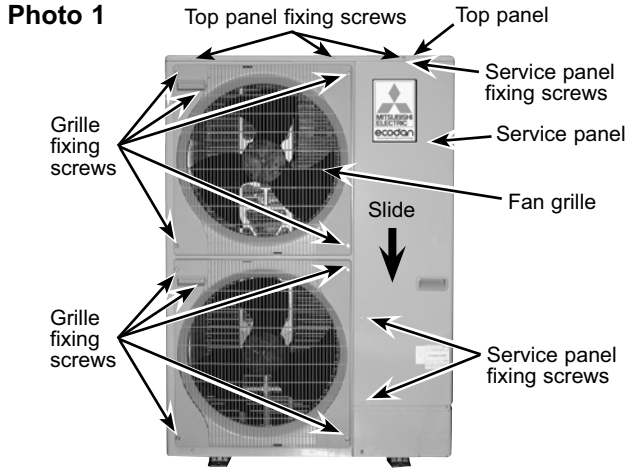
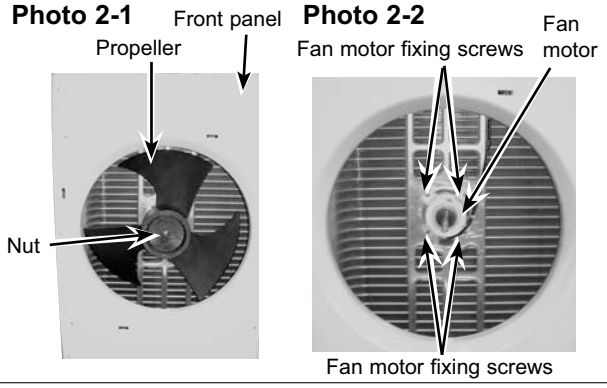
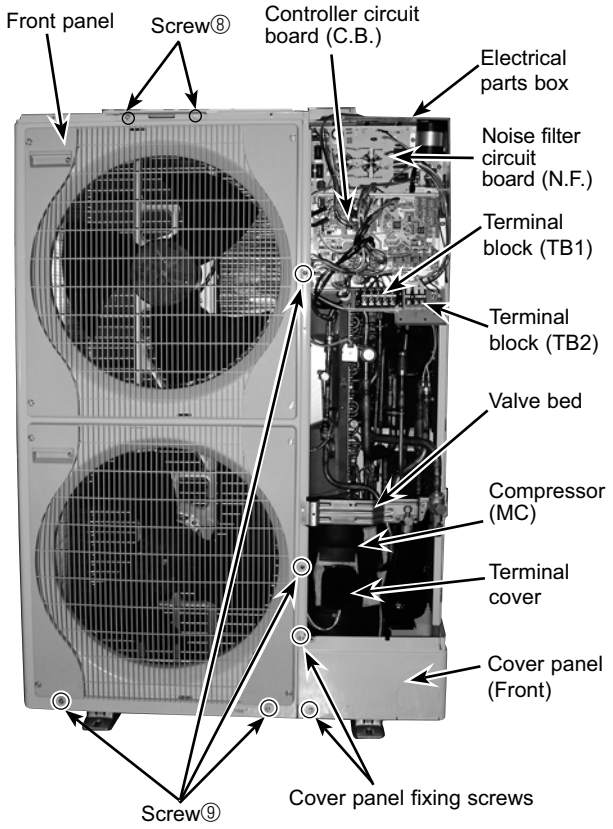
Photo 8



Note 1: Recover refrigerant without spreading it in the air.
Note 2: The welded part can be removed easily by removing the right side panel.
Note 3: When installing the 4-way valve and LEV cover it with a wet cloth to prevent it from heating (120°C or more), then braze the pipes so that the inside of pipes are not oxidized.
Note 4: When installing the high pressure switch, cover it with a wet cloth to prevent it from heating (100°C or more), then braze the pipes so that the inside of pipes are not oxidized.

OPERATING PROCEDURE	PHOTOS
11. Removing the reactor (DCL) and capacitor (CE) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the electrical parts box. (See Photo 3) <Removing the reactor> (4) Remove 4 reactor fixing screws (4 × 10) and remove the reactor. <Removing the capacitor> (4) Remove 2 capacitor band fixing screws (4 × 10) and remove the capacitor. ※ The reactor and capacitor is attached to the rear of the electrical parts box.	**Photo 9** 
12. Removing the compressor (MC) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove 2 front cover panel fixing screws (5 × 12) and remove the front cover panel. (See Photo 3.) (4) Remove 2 back cover panel fixing screws (5 × 12) and remove the back cover panel. (5) Remove the electrical parts box. (See Photo 3) (6) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) then remove the valve bed. (7) Remove 3 right side panel fixing screws (5 × 12) in the rear of the unit then remove the right side panel. (8) Remove 3 separator fixing screws (4 × 10) and remove the separator. (9) Recover refrigerant. (10) Remove the 3 points of the motor for compressor fixing nut using a spanner or a adjustable wrench. (11) Remove the welded pipe of motor for compressor inlet and outlet then remove the compressor. **Note: Recover refrigerant without spreading it in the air.**	**Photo 10** 
13. Removing the power receiver (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove 2 front cover panel fixing screws (5 × 12) and remove the front cover panel. (See Photo 3) (4) Remove 2 back cover panel fixing screws (5 × 12) and remove the back cover panel. (5) Remove the electrical parts box. (See Photo 3) (6) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) then remove the valve bed. (7) Remove 3 right side panel fixing screws (5 × 12) in the rear of the unit then remove the right side panel. (8) Recover refrigerant. (9) Remove 4 welded pipes of power receiver inlet and outlet. (10) Remove 2 receiver leg fixing screws (4 × 10). **Note: Recover refrigerant without spreading it in the air.**	

PUHZ-SW100YHA.UK **PUHZ-SW100YHA-BS.UK**
PUHZ-SW120YHA.UK **PUHZ-SW120YHA-BS.UK**

OPERATING PROCEDURE	PHOTOS & ILLUSTRATION
1. Removing the service panel and top panel (1) Remove 3 service panel fixing screws (5 × 12) and slide the hook on the right downward to remove the service panel. (2) Remove screws (3 for front, 3 for rear/5 × 12) of the top panel and remove it.	**Photo 1** 
2. Removing the fan motor (MF1, MF2) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove 5 fan grille fixing screws (5 × 12) to detach the fan grille. (See Photo 1) (4) Remove a nut (for right handed screw of M6) to detach the propeller. (See Photo 2-1) (5) Disconnect the connectors, CNF1, CNF2 on controller circuit board in electrical parts box. (6) Remove 4 fan motor fixing screws (5 × 20) to detach the fan motor. (See Photo 2-2)	**Photo 2-1** **Photo 2-2** 
3. Removing the electrical parts box (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the indoor/outdoor connecting wire from terminal block. (4) Disconnect the connector CNF1, CNF2, LEV-A and LEV-B on the controller circuit board. <Symbols on the board> • CNF1, CNF2 : Fan motor • LEV-A, LEV-B : LEV (5) Disconnect the pipe-side connections of the following parts. • Thermistor <Liquid>(TH3) • Thermistor <Discharge>(TH4) • Thermistor <2-phase pipe>(TH6) • Thermistor <Ambient>(TH7) • Thermistor <Comp. surface> (TH34) • High pressure switch (63H) • High pressure sensor (63HS) • Low pressure switch (63L) • 4-way valve coil (21S4)	**Photo 3** 

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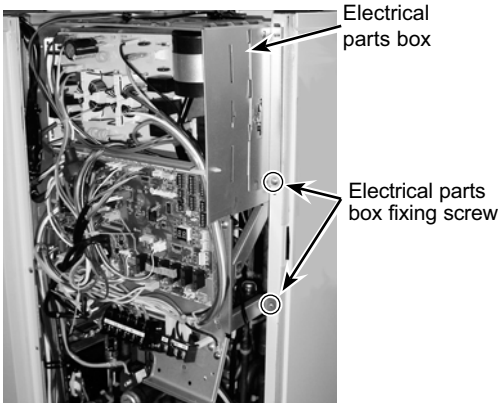
From the previous page.

OPERATING PROCEDURE

(6) Remove the terminal cover and disconnect the compressor lead wire.
(7) Remove 2 electrical parts box fixing screws (4 × 10) and detach the electrical parts box by pulling it upward. The electrical parts box is fixed with 2 hooks on the left and 1 hook on the right.

PHOTOS & ILLUSTRATION

Photo 3-2



4. Disassembling the electrical parts box

(1) Disconnect all the connectors on the controller circuit board.
(2) Remove the 3 screws, screw ①, ② and ③, that fix the plate equipped with the outdoor controller circuit board, and the electrical parts box, screw ① from the front and the screw ② and ③ from the bottom of the electrical parts box. (See Photo 4-1 and 4-2)
(3) Slide the plate in the direction of the arrow A and remove it. (See Photo 5)
(4) Remove the lead wires from the clamp on the bottom of the electrical parts box. (See Photo 4-3)
(5) Remove the 3 screws, screw ④ and ⑤, that fix the bottom side of the electrical parts box and remove the bottom side plate by sliding in the direction of the arrow B. (See Photo 4-3 and 4-4)
(6) Remove the noise filter circuit board from the electrical parts box. Then remove the 2 screws, screw ⑥ and ⑦, that fix the plate equipped with the noise filter circuit board and converter circuit board. (See Photo 4-5)

Note: When reassembling the electrical parts box, make sure the wirings are correct.

Photo 4-1

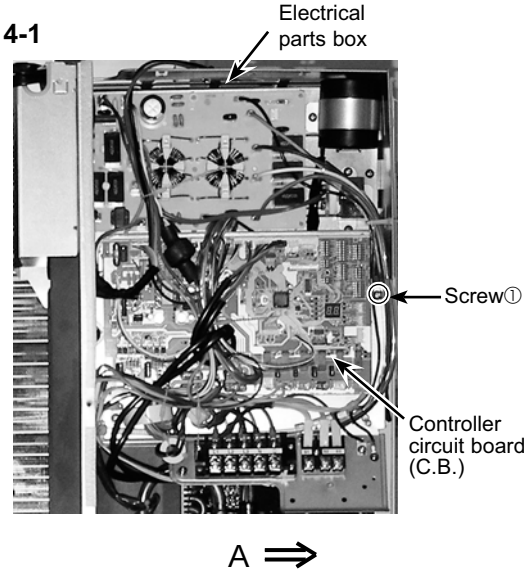


Photo 4-2

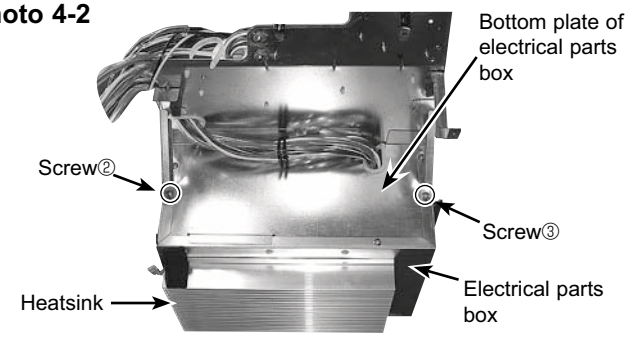


Photo 4-3

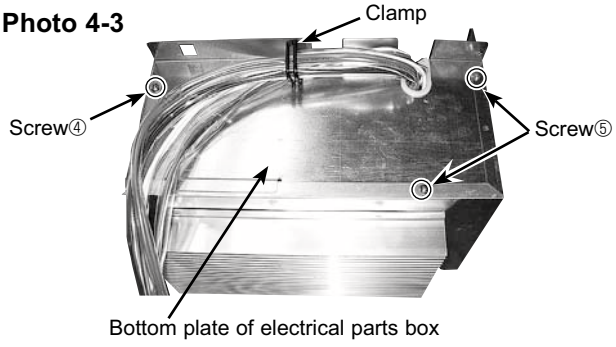


Photo 4-4

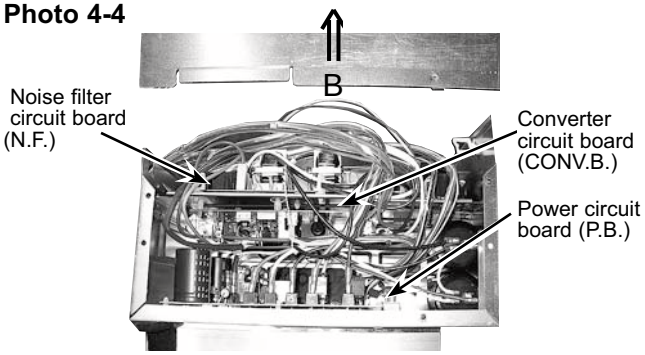
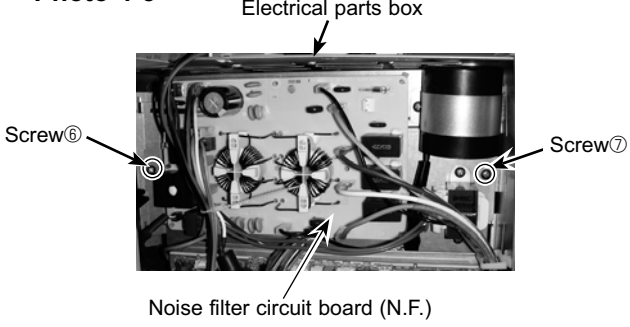
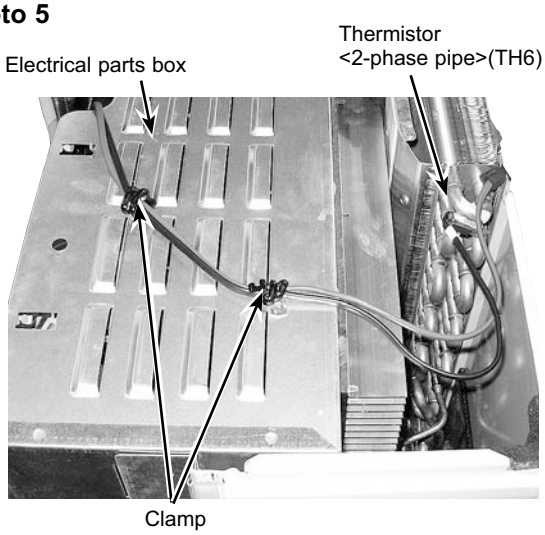
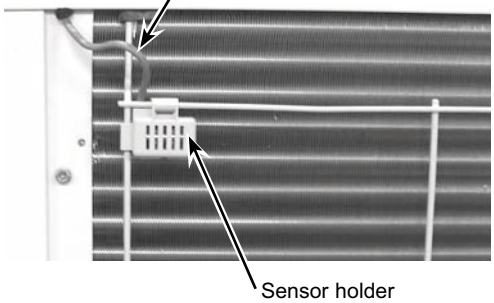
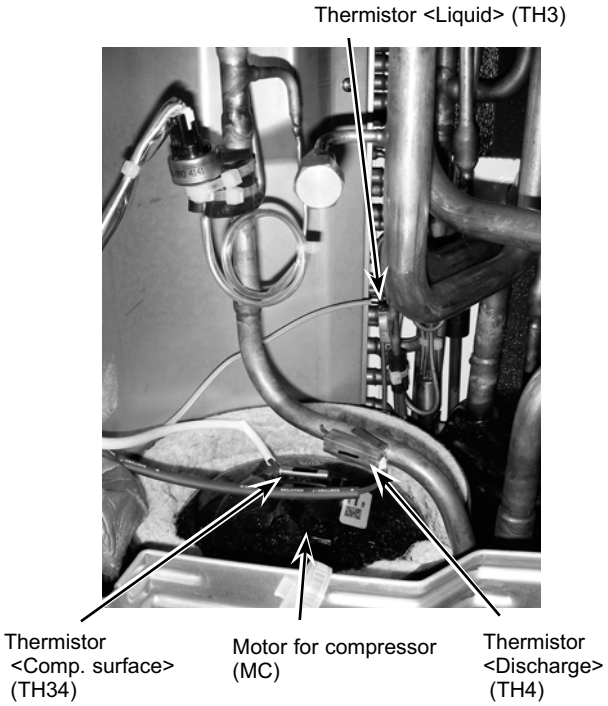


Photo 4-5



OPERATING PROCEDURE	PHOTOS
5. Removing the thermistor <2-phase pipe> (TH6) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the connector TH7/6 (red), on the controller circuit board in the electrical parts box. (4) Loosen the 2 wire clamps on top of the electrical parts box. (5) Pull out the thermistor <2-phase pipe> (TH6) from the sensor holder. **Note: In case of replacing thermistor <2-phase pipe> (TH6), replace it together with thermistor <Ambient> (TH7) since they are combined together.** **Refer to No.6 below to remove thermistor <Ambient>.**	**Photo 5** 
6. Removing the thermistor <Ambient> (TH7) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Disconnect the connector TH7/6(red) on the controller circuit board in the electrical parts box. (4) Loosen the 2 wire clamps on top of the electrical parts box. (See Photo 5) (5) Pull out the thermistor <Ambient> (TH7) from the sensor holder. **Note: In case of replacing thermistor <Ambient> (TH7), replace it together with thermistor <2-phase pipe> (TH6), since they are combined together.** **Refer to No.5 above to remove thermistor <2-phase pipe>.**	**Photo 6** 
7. Removing the thermistor <Liquid> (TH3), thermistor <Discharge> (TH4) and thermistor <Comp. surface> (TH34) (1) Remove the service panel. (See Photo 1) (2) Disconnect the connectors, TH3 (white) and TH4 (white), TH34 (red) on the controller circuit board in the electrical parts box. (3) Loosen the clamp for the lead wire in the rear of the electrical parts box. (See Photo 5) (4) Pull out the thermistor <Liquid> (TH3) and thermistor <Discharge> (TH4) from the sensor holder. [Removing the thermistor<Comp. surface> (TH34)] (5) Remove the sound proof cover (upper) for compressor. (6) Pull out the thermistor <Comp. surface> (TH34) from the holder of the compressor shell.	**Photo 7** 

OPERATING PROCEDURE

8. Removing the 4-way valve coil (21S4), and LEV coil (LEV(A), LEV(B))

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)

[Removing the 4-way valve coil]

(3) Remove 4-way valve coil fixing screw (M5 × 6).
(4) Remove the 4-way valve coil by sliding the coil toward you.
(5) Disconnect the connector 21S4 (green) on the controller circuit board in the electrical parts box.

[Removing the LEV coil]

(3) Remove the LEV coil by sliding the coil upward.
(4) Disconnect the connectors, LEV A (white) and LEV B (red), on the controller circuit board in the electrical parts box.

9. Removing the 4-way valve

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)
(3) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) then remove the valve bed.
(4) Remove 4 right side panel fixing screws (5 × 12) in the rear of the unit then remove the right side panel.
(5) Remove the 4-way valve coil. (See Photo 8)
(6) Recover refrigerant.
(7) Remove the welded part of 4-way valve.

10. Removing LEV

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)
(3) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) then remove the valve bed.
(4) Remove 4 right side panel fixing screws (5 × 12) in the rear of the unit then remove the right side panel.
(5) Remove the LEV. (See Photo 8)
(6) Recover refrigerant.
(7) Remove the welded part of LEV.

11. Removing the high pressure switch (63H)

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)
(3) Remove 3 right side panel fixing screws (5 × 12) in the rear of the unit and remove the right side panel.
(4) Pull out the lead wire of high pressure switch.
(5) Recover refrigerant.
(6) Remove the welded part of high pressure switch.

PHOTOS

Photo 8

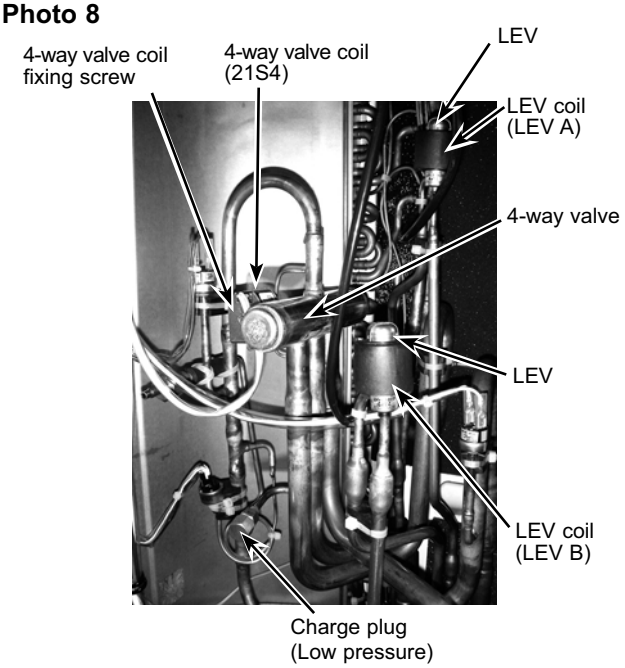
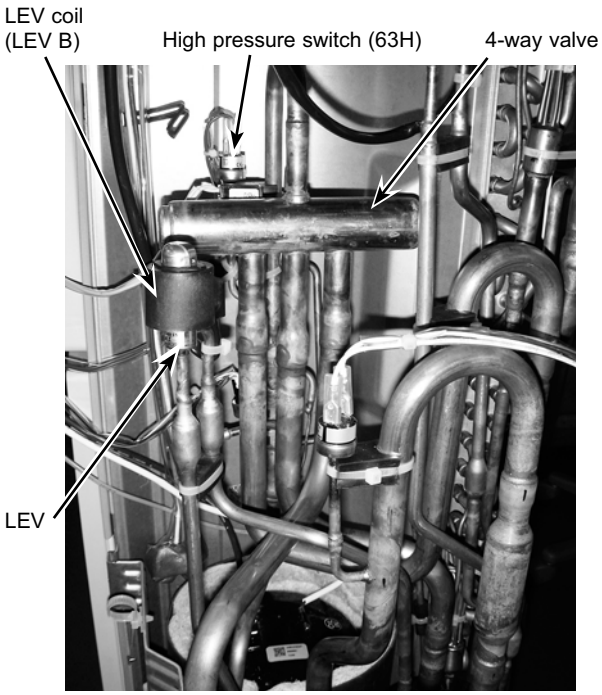


Photo 9



Note 1: Recover refrigerant without spreading it in the air.
Note 2: The welded part can be removed easily by removing the right side panel.
Note 3: When installing the 4-way valve and LEV cover it with a wet cloth to prevent it from heating (120°C or more), then braze the pipes so that the inside of pipes are not oxidized.
Note 4: When installing the high pressure switch, cover it with a wet cloth to prevent it from heating (100°C or more), then braze the pipes so that the inside of pipes are not oxidized.

OPERATING PROCEDURE

12. Removing the reactors (ACL1, ACL2, ACL3)

(1) Remove the service panel. (See Photo 1)
(2) Remove the top panel. (See Photo 1)
(3) Remove the 6 screws, screw ⑧ and ⑨ (5 × 12), that fix the front panel and remove the front panel. (See Photo 3)
(4) Remove the 2 screws, screw ⑩ and ⑪ (both 4 × 10), that fix the separator, screw ⑩ from the valve bed and screw ⑪ from the bottom of the separator, and tilt the separator to the side of the fan motor slightly. (See Photo 12-1 and 12-2)
(5) Disconnect the lead wires from the reactor and remove the 4 screws, screw ⑫, that fix the reactor to remove the reactor. (See Photo 12-3 and 12-4)

Note 1: The reactor is very heavy (4kg)! Be careful when handling it.
Note 2: The reactor box is also removable.

PHOTOS

Photo 12-1

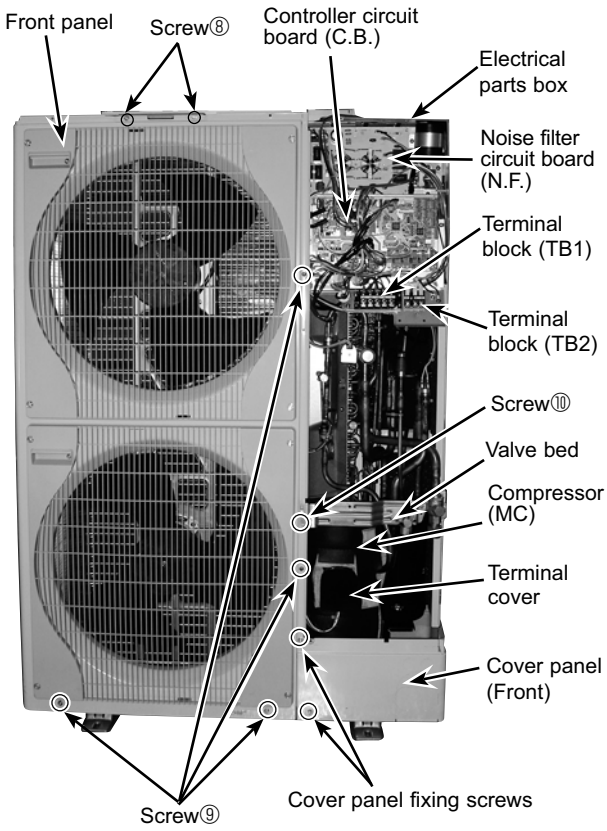


Photo 12-2

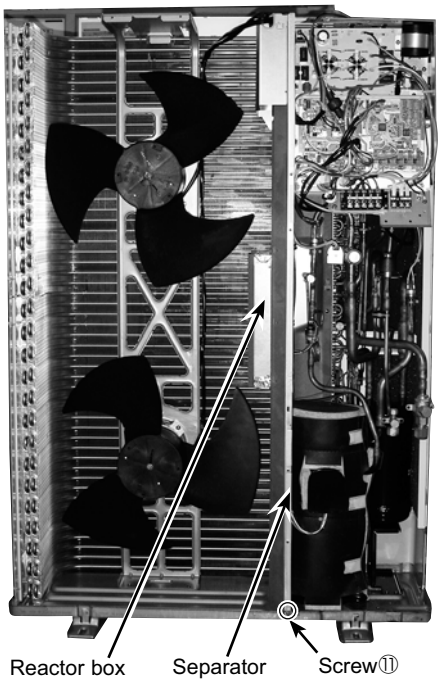


Photo 12-3

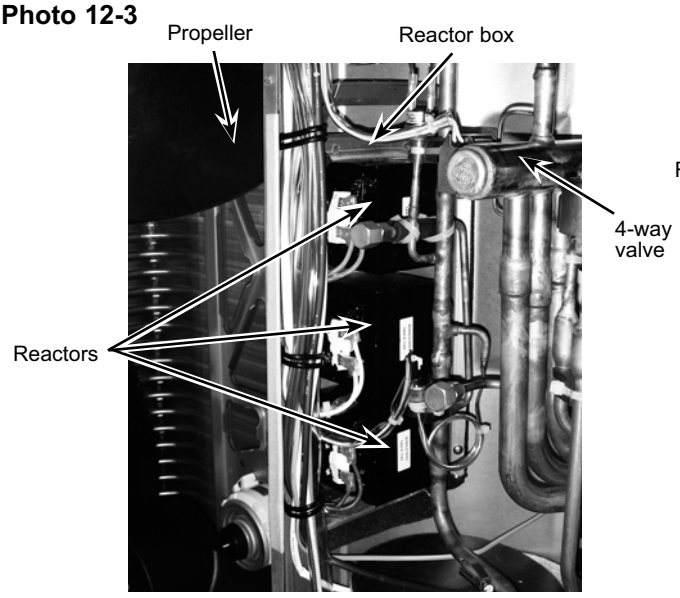
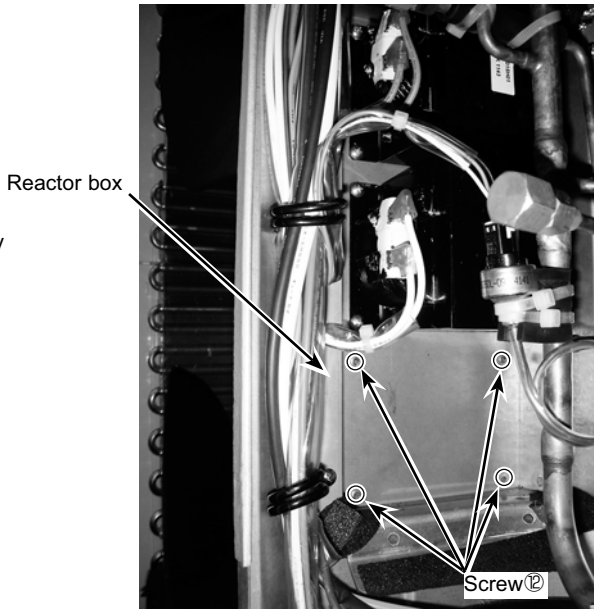
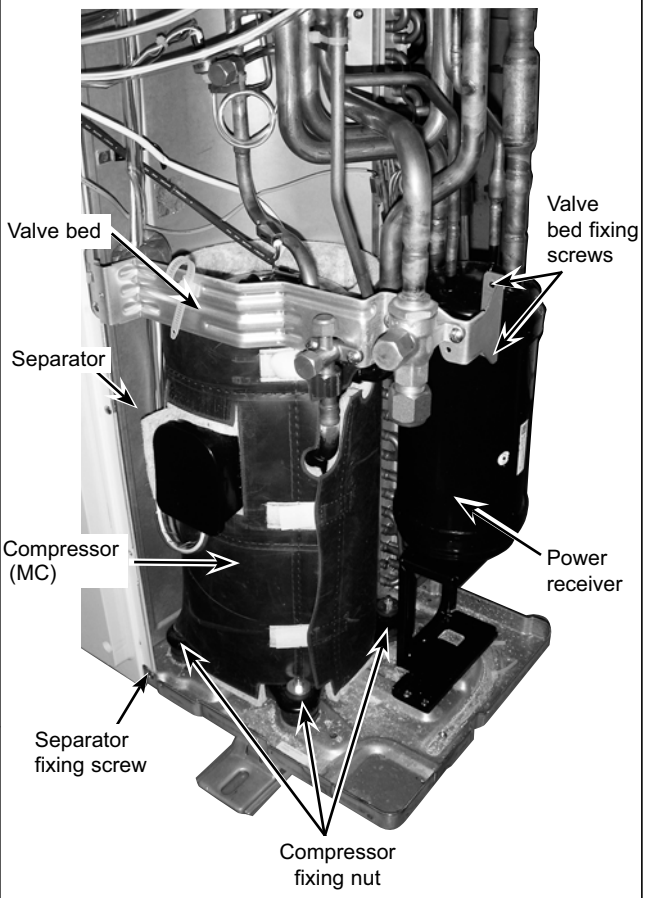


Photo 12-4



OPERATING PROCEDURE	PHOTOS
13. Removing the compressor (MC) (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove 2 front cover panel fixing screws (5 × 12) and remove the front cover panel. (See Photo 3-1) (4) Remove 2 back cover panel fixing screws (5 × 12) and remove the back cover panel. (5) Remove the electrical parts box. (See Photo 3) (6) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed. (7) Remove 3 right side panel fixing screws (5 × 12) in the rear of the unit and then remove the right side panel. (8) Remove 3 separator fixing screws (4 × 10) and remove the separator. (9) Recover refrigerant. (10) Remove the 3 points of the compressor fixing nut using a spanner or a adjustable wrench. (11) Remove the welded pipe of compressor inlet and outlet and then remove the compressor. **Note: Recover refrigerant without spreading it in the air.**	**Photo 13** 
14. Removing the power receiver (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove 2 front cover panel fixing screws (5 × 12) and remove the front cover panel. (See Photo 3-1) (4) Remove 2 back cover panel fixing screws (5 × 12) and remove the back cover panel. (5) Remove the electrical parts box. (See Photo 3-1) (6) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed. (7) Remove 3 right side panel fixing screws (5 × 12) in the rear of the unit and then remove the right side panel. (8) Recover refrigerant. (9) Remove 4 welded pipes of power receiver inlet and outlet. (10) Remove 2 receiver leg fixing screws (4 × 10). **Note: Recover refrigerant without spreading it in the air.**	

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE : TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN

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